SEQUENCE LISTING

<110> NPS PHARMACEUTICALS, INC.

<120> G-PROTEIN FUSION RECEPTORS AND CHIMERIC GABAB RECEPTORS

<130> 241/086-CIP

<140> TO BE ASSIGNED
<141> HEREWITH

<150> US 60/080,671
<151> 1998-04-03

<150> PCT/US99/07333
<151> 1999-04-02

<160> 50

<170> FastSEQ for Windows Version 3.0

<210> 1
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Met Ala Phe Tyr Ser Cys Cys Trp Val Leu Leu Ala Leu Thr Trp His
 1               5                  10                  15

Thr Ser Ala Tyr Gly Pro Asp Gln Arg Ala Gln Lys Lys Gly Asp Ile
            20                  25                  30

Ile Leu Gly Gly Leu Phe Pro Ile His Phe Gly Val Ala Ala Lys Asp
        35                  40                  45

Gln Asp Leu Lys Ser Arg Pro Glu Ser Val Glu Cys Ile Arg Tyr Asn
    50                  55                  60

Phe Arg Gly Phe Arg Trp Leu Gln Ala Met Ile Phe Ala Ile Glu Glu
65                  70                  75                  80

Ile Asn Ser Ser Pro Ala Leu Leu Pro Asn Leu Thr Leu Gly Tyr Arg
                85                  90                  95

Ile Phe Asp Thr Cys Asn Thr Val Ser Lys Ala Leu Glu Ala Thr Leu
            100                 105                 110
```

```
Ser Phe Val Ala Gln Asn Lys Ile Asp Ser Leu Asn Leu Asp Glu Phe
        115                 120                 125

Cys Asn Cys Ser Glu His Ile Pro Ser Thr Ile Ala Val Val Gly Ala
    130                 135                 140

Thr Gly Ser Gly Val Ser Thr Ala Val Ala Asn Leu Leu Gly Leu Phe
145                 150                 155                 160

Tyr Ile Pro Gln Val Ser Tyr Ala Ser Ser Ser Arg Leu Leu Ser Asn
                165                 170                 175

Lys Asn Gln Phe Lys Ser Phe Leu Arg Thr Ile Pro Asn Asp Glu His
            180                 185                 190

Gln Ala Thr Ala Met Ala Asp Ile Ile Glu Tyr Phe Arg Trp Asn Trp
        195                 200                 205

Val Gly Thr Ile Ala Ala Asp Asp Asp Tyr Gly Arg Pro Gly Ile Glu
    210                 215                 220

Lys Phe Arg Glu Glu Ala Glu Glu Arg Asp Ile Cys Ile Asp Phe Ser
225                 230                 235                 240

Glu Leu Ile Ser Gln Tyr Ser Asp Glu Glu Glu Ile Gln His Val Val
                245                 250                 255

Glu Val Ile Gln Asn Ser Thr Ala Lys Val Ile Val Val Phe Ser Ser
            260                 265                 270

Gly Pro Asp Leu Glu Pro Leu Ile Lys Glu Ile Val Arg Arg Asn Ile
        275                 280                 285

Thr Gly Lys Ile Trp Leu Ala Ser Glu Ala Trp Ala Ser Ser Ser Leu
    290                 295                 300

Ile Ala Met Pro Gln Tyr Phe His Val Val Gly Gly Thr Ile Gly Phe
305                 310                 315                 320

Ala Leu Lys Ala Gly Gln Ile Pro Gly Phe Arg Glu Phe Leu Lys Lys
                325                 330                 335

Val His Pro Arg Lys Ser Val His Asn Gly Phe Ala Lys Glu Phe Trp
            340                 345                 350

Glu Glu Thr Phe Asn Cys His Leu Gln Glu Gly Ala Lys Gly Pro Leu
        355                 360                 365

Pro Val Asp Thr Phe Leu Arg Gly His Glu Glu Ser Gly Asp Arg Phe
    370                 375                 380

Ser Asn Ser Ser Thr Ala Phe Arg Pro Leu Cys Thr Gly Asp Glu Asn
385                 390                 395                 400

Ile Ser Ser Val Glu Thr Pro Tyr Ile Asp Tyr Thr His Leu Arg Ile
```

```
                405                 410                 415

Ser Tyr Asn Val Tyr Leu Ala Val Tyr Ser Ile Ala His Ala Leu Gln
            420                 425                 430

Asp Ile Tyr Thr Cys Leu Pro Gly Arg Gly Leu Phe Thr Asn Gly Ser
        435                 440                 445

Cys Ala Asp Ile Lys Lys Val Glu Ala Trp Gln Val Leu Lys His Leu
    450                 455                 460

Arg His Leu Asn Phe Thr Asn Asn Met Gly Glu Gln Val Thr Phe Asp
465                 470                 475                 480

Glu Cys Gly Asp Leu Val Gly Asn Tyr Ser Ile Ile Asn Trp His Leu
                485                 490                 495

Ser Pro Glu Asp Gly Ser Ile Val Phe Lys Glu Val Gly Tyr Tyr Asn
            500                 505                 510

Val Tyr Ala Lys Lys Gly Glu Arg Leu Phe Ile Asn Glu Glu Lys Ile
        515                 520                 525

Leu Trp Ser Gly Phe Ser Arg Glu Val Pro Phe Ser Asn Cys Ser Arg
    530                 535                 540

Asp Cys Leu Ala Gly Thr Arg Lys Gly Ile Ile Glu Gly Glu Pro Thr
545                 550                 555                 560

Cys Cys Phe Glu Cys Val Glu Cys Pro Asp Gly Glu Tyr Ser Asp Glu
                565                 570                 575

Thr Asp Ala Ser Ala Cys Asn Lys Cys Pro Asp Asp Phe Trp Ser Asn
            580                 585                 590

Glu Asn His Thr Ser Cys Ile Ala Lys Glu Ile Glu Phe Leu Ser Trp
        595                 600                 605

Thr Glu Pro Phe
    610
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<210> 2
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<212> PRT
<213> Human

<400> 2

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Met Leu Leu Leu Leu Leu Leu Ala Pro Leu Phe Leu Arg Pro Pro Gly
 1               5                  10                  15

Ala Gly Gly Ala Gln Thr Pro Asn Ala Thr Ser Glu Gly Cys Gln Ile
            20                  25                  30
```

```
Ile His Pro Pro Trp Glu Gly Gly Ile Arg Tyr Arg Gly Leu Thr Arg
        35                  40                  45

Asp Gln Val Lys Ala Ile Asn Phe Leu Pro Val Asp Tyr Glu Ile Glu
    50                  55                  60

Tyr Val Cys Arg Gly Glu Arg Glu Val Val Gly Pro Lys Val Arg Lys
65                  70                  75                  80

Cys Leu Ala Asn Gly Ser Trp Thr Asp Met Asp Thr Pro Ser Arg Cys
                85                  90                  95

Val Arg Ile Cys Ser Lys Ser Tyr Leu Thr Leu Glu Asn Gly Lys Val
            100                 105                 110

Phe Leu Thr Gly Gly Asp Leu Pro Ala Leu Asp Gly Ala Arg Val Asp
        115                 120                 125

Phe Arg Cys Asp Pro Asp Phe His Leu Val Gly Ser Ser Arg Ser Ile
    130                 135                 140

Cys Ser Gln Gly Gln Trp Ser Thr Pro Lys Pro His Cys Gln Val Asn
145                 150                 155                 160

Arg Thr Pro His Ser Glu Arg Arg Ala Val Tyr Ile Gly Ala Leu Phe
                165                 170                 175

Pro Met Ser Gly Gly Trp Pro Gly Gly Gln Ala Cys Gln Pro Ala Val
            180                 185                 190

Glu Met Ala Leu Glu Asp Val Asn Ser Arg Arg Asp Ile Leu Pro Asp
        195                 200                 205

Tyr Glu Leu Lys Leu Ile His His Asp Ser Lys Cys Asp Pro Gly Gln
    210                 215                 220

Ala Thr Lys Tyr Leu Tyr Glu Leu Leu Tyr Asn Asp Pro Ile Lys Ile
225                 230                 235                 240

Ile Leu Met Pro Gly Cys Ser Ser Val Ser Thr Leu Val Ala Glu Ala
                245                 250                 255

Ala Arg Met Trp Asn Leu Ile Val Leu Ser Tyr Gly Ser Ser Ser Pro
            260                 265                 270

Ala Leu Ser Asn Arg Gln Arg Phe Pro Thr Phe Phe Arg Thr His Pro
        275                 280                 285

Ser Ala Thr Leu His Asn Pro Thr Arg Val Lys Leu Phe Glu Lys Trp
    290                 295                 300


Gly Trp Lys Lys Ile Ala Thr Ile Gln Gln Thr Thr Glu Val Phe Thr
305                 310                 315                 320

Ser Thr Leu Asp Asp Leu Glu Glu Arg Val Lys Glu Ala Gly Ile Glu
                325                 330                 335
```

```
Ile Thr Phe Arg Gln Ser Phe Phe Ser Asp Pro Ala Val Pro Val Lys
            340                 345                 350

Asn Leu Lys Arg Gln Asp Ala Arg Ile Ile Val Gly Leu Phe Tyr Glu
        355                 360                 365

Thr Glu Ala Arg Lys Val Phe Cys Glu Val Tyr Lys Glu Arg Leu Phe
    370                 375                 380

Gly Lys Lys Tyr Val Trp Phe Leu Ile Gly Trp Tyr Ala Asp Asn Trp
385                 390                 395                 400

Phe Lys Ile Tyr Asp Pro Ser Ile Asn Cys Thr Val Asp Glu Met Thr
                405                 410                 415

Glu Ala Val Glu Gly His Ile Thr Thr Glu Ile Val Met Leu Asn Pro
            420                 425                 430

Ala Asn Thr Arg Ser Ile Ser Asn Met Thr Ser Gln Glu Phe Val Glu
        435                 440                 445

Lys Leu Thr Lys Arg Leu Lys Arg His Pro Glu Glu Thr Gly Gly Phe
    450                 455                 460

Gln Glu Ala Pro Leu Ala Tyr Asp Ala Ile Trp Ala Leu Ala Leu Ala
465                 470                 475                 480

Leu Asn Lys Thr Ser Gly Gly Gly Gly Arg Ser Gly Val Arg Leu Glu
                485                 490                 495

Asp Phe Asn Tyr Asn Asn Gln Thr Ile Thr Asp Gln Ile Tyr Arg Ala
            500                 505                 510

Met Asn Ser Ser Ser Phe Glu Gly Val Ser Gly His Val Val Phe Asp
        515                 520                 525

Ala Ser Gly Ser Arg Met Ala Trp Thr Leu Ile Glu Gln Leu Gln Gly
    530                 535                 540

Gly Ser Tyr Lys Lys Ile Gly Tyr Tyr Asp Ser Thr Lys Asp Asp Leu
545                 550                 555                 560

Ser Trp Ser Lys Thr Asp Lys Trp Ile Gly Gly Ser Pro Pro Ala Asp
                565                 570                 575

Gln Thr Leu Val Ile Lys Thr Phe Arg Phe Leu Ser Gln Lys
            580                 585                 590
```

<210> 3
<211> 473
<212> PRT
<213> Human

<400> 3

```
Met Gly Pro Gly Ala Pro Phe Ala Arg Val Gly Trp Pro Leu Pro Leu
 1               5                  10                  15

Leu Val Val Met Ala Ala Gly Val Ala Pro Val Trp Ala Ser His Ser
            20                  25                  30

Pro His Leu Pro Arg Pro His Ser Arg Val Pro Pro His Pro Ser Ser
        35                  40                  45

Glu Arg Arg Ala Val Tyr Ile Gly Ala Leu Phe Pro Met Ser Gly Gly
    50                  55                  60

Trp Pro Gly Gly Gln Ala Cys Gln Pro Ala Val Glu Met Ala Leu Glu
65                  70                  75                  80

Asp Val Asn Ser Arg Arg Asp Ile Leu Pro Asp Tyr Glu Leu Lys Leu
                85                  90                  95

Ile His His Asp Ser Lys Cys Asp Pro Gly Gln Ala Thr Lys Tyr Leu
            100                 105                 110

Tyr Glu Leu Leu Tyr Asn Asp Pro Ile Lys Ile Ile Leu Met Pro Gly
        115                 120                 125

Cys Ser Ser Val Ser Thr Leu Val Ala Glu Ala Ala Arg Met Trp Asn
    130                 135                 140

Leu Ile Val Leu Ser Tyr Gly Ser Ser Ser Pro Ala Leu Ser Asn Arg
145                 150                 155                 160

Gln Arg Phe Pro Thr Phe Phe Arg Thr His Pro Ser Ala Thr Leu His
                165                 170                 175

Asn Pro Thr Arg Val Lys Leu Phe Glu Lys Trp Gly Trp Lys Lys Ile
            180                 185                 190

Ala Thr Ile Gln Gln Thr Thr Glu Val Phe Thr Ser Thr Leu Asp Asp
        195                 200                 205

Leu Glu Glu Arg Val Lys Glu Ala Gly Ile Glu Ile Thr Phe Arg Gln
    210                 215                 220

Ser Phe Phe Ser Asp Pro Ala Val Pro Val Lys Asn Leu Lys Arg Gln
225                 230                 235                 240

Asp Ala Arg Ile Ile Val Gly Leu Phe Tyr Glu Thr Glu Ala Arg Lys
                245                 250                 255

Val Phe Cys Glu Val Tyr Lys Glu Arg Leu Phe Gly Lys Lys Tyr Val
            260                 265                 270
```

```
Trp Phe Leu Ile Gly Trp Tyr Ala Asp Asn Trp Phe Lys Ile Tyr Asp
        275                 280                 285

Pro Ser Ile Asn Cys Thr Val Asp Glu Met Thr Glu Ala Val Glu Gly
    290                 295                 300

His Ile Thr Thr Glu Ile Val Met Leu Asn Pro Ala Asn Thr Arg Ser
305                 310                 315                 320

Ile Ser Asn Met Thr Ser Gln Glu Phe Val Glu Lys Leu Thr Lys Arg
                325                 330                 335

Leu Lys Arg His Pro Glu Glu Thr Gly Gly Phe Gln Glu Ala Pro Leu
            340                 345                 350

Ala Tyr Asp Ala Ile Trp Ala Leu Ala Leu Ala Leu Asn Lys Thr Ser
        355                 360                 365

Gly Gly Gly Gly Arg Ser Gly Val Arg Leu Glu Asp Phe Asn Tyr Asn
    370                 375                 380

Asn Gln Thr Ile Thr Asp Gln Ile Tyr Arg Ala Met Asn Ser Ser Ser
385                 390                 395                 400

Phe Glu Gly Val Ser Gly His Val Val Phe Asp Ala Ser Gly Ser Arg
                405                 410                 415

Met Ala Trp Thr Leu Ile Glu Gln Leu Gln Gly Gly Ser Tyr Lys Lys
            420                 425                 430

Ile Gly Tyr Tyr Asp Ser Thr Lys Asp Asp Leu Ser Trp Ser Lys Thr
        435                 440                 445

Asp Lys Trp Ile Gly Gly Ser Pro Pro Ala Asp Gln Thr Leu Val Ile
    450                 455                 460

Lys Thr Phe Arg Phe Leu Ser Gln Lys
465                 470
```

<210> 4
<211> 480
<212> PRT
<213> Human

<400> 4

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Met Ala Ser Pro Arg Ser Ser Gly Gln Pro Gly Pro Xaa Pro Pro Pro
 1               5                  10                  15

Pro Pro Pro Pro Ala Arg Leu Leu Leu Leu Leu Leu Leu Pro Leu Leu
            20                  25                  30

Leu Pro Leu Ala Pro Gly Ala Trp Gly Trp Ala Arg Gly Ala Pro Arg
```

```
        35                  40                  45

Pro Pro Pro Ser Ser Pro Pro Leu Ser Ile Met Gly Leu Met Pro Leu
    50                  55                  60

Thr Lys Glu Val Ala Lys Gly Ser Ile Gly Arg Gly Val Leu Pro Ala
65                  70                  75                  80

Val Glu Leu Ala Ile Glu Gln Ile Arg Asn Glu Ser Leu Leu Arg Pro
                85                  90                  95

Tyr Phe Leu Asp Leu Arg Leu Tyr Asp Thr Glu Cys Asp Asn Ala Lys
            100                 105                 110

Gly Leu Lys Ala Phe Tyr Asp Ala Ile Lys Tyr Gly Pro Asn His Leu
        115                 120                 125

Met Val Phe Gly Gly Val Cys Pro Ser Val Thr Ser Ile Ile Ala Glu
    130                 135                 140

Ser Leu Gln Gly Trp Asn Leu Val Gln Leu Ser Phe Ala Ala Thr Thr
145                 150                 155                 160

Pro Val Leu Ala Asp Lys Lys Lys Tyr Pro Tyr Phe Phe Arg Thr Val
                165                 170                 175

Pro Ser Asp Asn Ala Val Asn Pro Ala Ile Leu Lys Leu Leu Lys His
            180                 185                 190

Tyr Gln Trp Lys Arg Val Gly Thr Leu Thr Gln Asp Val Gln Arg Phe
        195                 200                 205

Ser Glu Val Arg Asn Asp Leu Thr Gly Val Leu Tyr Gly Glu Asp Ile
    210                 215                 220

Glu Ile Ser Asp Thr Glu Ser Phe Ser Asn Asp Pro Cys Thr Ser Val
225                 230                 235                 240

Lys Lys Leu Lys Gly Asn Asp Val Arg Ile Ile Leu Gly Gln Phe Asp
                245                 250                 255

Gln Asn Met Ala Ala Lys Val Phe Cys Cys Ala Tyr Glu Glu Asn Met
            260                 265                 270

Tyr Gly Ser Lys Tyr Gln Trp Ile Ile Pro Gly Trp Tyr Glu Pro Ser
        275                 280                 285

Trp Trp Glu Gln Val His Thr Glu Ala Asn Ser Ser Arg Cys Leu Arg
    290                 295                 300

Lys Asn Leu Leu Ala Ala Met Glu Gly Tyr Ile Gly Val Asp Phe Glu
305                 310                 315                 320


Pro Leu Ser Ser Lys Gln Ile Lys Thr Ile Ser Gly Lys Thr Pro Gln
                325                 330                 335
```

```
Gln Tyr Glu Arg Glu Tyr Asn Asn Lys Arg Ser Gly Val Gly Pro Ser
            340                 345                 350

Lys Phe His Gly Tyr Ala Tyr Asp Gly Ile Trp Val Ile Ala Lys Thr
        355                 360                 365

Leu Gln Arg Ala Met Glu Thr Leu His Ala Ser Ser Arg His Gln Arg
    370                 375                 380

Ile Gln Asp Phe Asn Tyr Thr Asp His Thr Leu Gly Arg Ile Ile Leu
385                 390                 395                 400

Asn Ala Met Asn Glu Thr Asn Phe Phe Gly Val Thr Gly Gln Val Val
                405                 410                 415

Phe Arg Asn Gly Glu Arg Met Gly Thr Ile Lys Phe Thr Gln Phe Gln
            420                 425                 430

Asp Ser Arg Glu Val Lys Val Gly Glu Tyr Asn Ala Val Ala Asp Thr
        435                 440                 445

Leu Glu Ile Ile Asn Asp Thr Ile Arg Phe Gln Gly Ser Glu Pro Pro
    450                 455                 460

Lys Asp Lys Thr Ile Ile Leu Glu Gln Leu Arg Lys Ile Ser Leu Pro
465                 470                 475                 480
```

<210> 5
<211> 583
<212> PRT
<213> Human

<400> 5

```
Met Val Cys Glu Gly Lys Arg Ser Ala Ser Cys Pro Cys Phe Phe Leu
 1               5                  10                  15

Leu Thr Ala Lys Phe Tyr Trp Ile Leu Thr Met Met Gln Arg Thr His
            20                  25                  30

Ser Gln Glu Tyr Ala His Ser Ile Arg Val Asp Gly Asp Ile Ile Leu
        35                  40                  45

Gly Gly Leu Phe Pro Val His Ala Lys Gly Glu Arg Gly Val Pro Cys
    50                  55                  60

Gly Glu Leu Lys Lys Glu Lys Gly Ile His Arg Leu Glu Ala Met Leu
65                  70                  75                  80

Tyr Ala Ile Asp Gln Ile Asn Lys Asp Pro Asp Leu Leu Ser Asn Ile
                85                  90                  95

Thr Leu Gly Val Arg Ile Leu Asp Thr Cys Ser Arg Asp Thr Tyr Ala
            100                 105                 110
```

```
Leu Glu Gln Ser Leu Thr Phe Val Gln Ala Leu Ile Glu Lys Asp Ala
        115                 120                 125

Ser Asp Val Lys Cys Ala Asn Gly Asp Pro Pro Ile Phe Thr Lys Pro
    130                 135                 140

Asp Lys Ile Ser Gly Val Ile Gly Ala Ala Ala Ser Ser Val Ser Ile
145                 150                 155                 160

Met Val Ala Asn Ile Leu Arg Leu Phe Lys Ile Pro Gln Ile Ser Tyr
                165                 170                 175

Ala Ser Thr Ala Pro Glu Leu Ser Asp Asn Thr Arg Tyr Asp Phe Phe
            180                 185                 190

Ser Arg Val Val Pro Pro Asp Ser Tyr Gln Ala Gln Ala Met Val Asp
        195                 200                 205

Ile Val Thr Ala Leu Gly Trp Asn Tyr Val Ser Thr Leu Ala Ser Glu
    210                 215                 220

Gly Asn Tyr Gly Glu Ser Gly Val Glu Ala Phe Thr Gln Ile Ser Arg
225                 230                 235                 240

Glu Ile Gly Gly Val Cys Ile Ala Gln Ser Gln Lys Ile Pro Arg Glu
                245                 250                 255

Pro Arg Pro Gly Glu Phe Glu Lys Ile Ile Lys Arg Leu Leu Glu Thr
            260                 265                 270

Pro Asn Ala Arg Ala Val Ile Met Phe Ala Asn Glu Asp Asp Ile Arg
        275                 280                 285

Arg Ile Leu Glu Ala Ala Lys Lys Leu Asn Gln Ser Gly His Phe Leu
    290                 295                 300

Trp Ile Gly Ser Asp Ser Trp Gly Ser Lys Ile Ala Pro Val Tyr Gln
305                 310                 315                 320

Gln Glu Glu Ile Ala Glu Gly Ala Val Thr Ile Leu Pro Lys Arg Ala
                325                 330                 335

Ser Ile Asp Gly Phe Asp Arg Tyr Phe Arg Ser Arg Thr Leu Ala Asn
            340                 345                 350

Asn Arg Arg Asn Val Trp Phe Ala Glu Phe Trp Glu Glu Asn Phe Gly
        355                 360                 365


Cys Lys Leu Gly Ser His Gly Lys Arg Asn Ser His Ile Lys Lys Cys
    370                 375                 380

Thr Gly Leu Glu Arg Ile Ala Arg Asp Ser Ser Tyr Glu Gln Glu Gly
385                 390                 395                 400

Lys Val Gln Phe Val Ile Asp Ala Val Tyr Ser Met Ala Tyr Ala Leu
                405                 410                 415
```

```
His Asn Met His Lys Asp Leu Cys Pro Gly Tyr Ile Gly Leu Cys Pro
            420                 425                 430

Arg Met Ser Thr Ile Asp Gly Lys Glu Leu Leu Gly Tyr Ile Arg Ala
        435                 440                 445

Val Asn Phe Asn Gly Ser Ala Gly Thr Pro Val Thr Phe Asn Glu Asn
    450                 455                 460

Gly Asp Ala Pro Gly Arg Tyr Asp Ile Phe Gln Tyr Gln Ile Thr Asn
465                 470                 475                 480

Lys Ser Thr Glu Tyr Lys Val Ile Gly His Trp Thr Asn Gln Leu His
                485                 490                 495

Leu Lys Val Glu Asp Met Gln Trp Ala His Arg Glu His Thr His Pro
            500                 505                 510

Ala Ser Val Cys Ser Leu Pro Cys Lys Pro Gly Glu Arg Lys Lys Thr
        515                 520                 525

Val Lys Gly Val Pro Cys Cys Trp His Cys Glu Arg Cys Glu Gly Tyr
    530                 535                 540

Asn Tyr Gln Val Asp Glu Leu Ser Cys Glu Leu Cys Pro Leu Asp Gln
545                 550                 555                 560

Arg Pro Asn Met Asn Arg Thr Gly Cys Gln Leu Ile Pro Ile Ile Lys
                565                 570                 575

Leu Glu Trp His Ser Pro Trp
            580
```

<210> 6
<211> 250
<212> PRT
<213> Human

<400> 6

```
Gly Ile Ala Leu Thr Leu Phe Ala Val Leu Gly Ile Phe Leu Thr Ala
 1               5                  10                  15

Phe Val Leu Gly Val Phe Ile Lys Phe Arg Asn Thr Pro Ile Val Lys
            20                  25                  30

Ala Thr Asn Arg Glu Leu Ser Tyr Leu Leu Leu Phe Ser Leu Leu Cys
        35                  40                  45

Cys Phe Ser Ser Ser Leu Phe Phe Ile Gly Glu Pro Gln Asp Trp Thr
    50                  55                  60

Cys Arg Leu Arg Gln Pro Ala Phe Gly Ile Ser Phe Val Leu Cys Ile
```

65 70 75 80

Ser Cys Ile Leu Val Lys Thr Asn Arg Val Leu Leu Val Phe Glu Ala
85 90 95

Lys Ile Pro Thr Ser Phe His Arg Lys Trp Trp Gly Leu Asn Leu Gln
100 105 110

Phe Leu Leu Val Phe Leu Cys Thr Phe Met Gln Ile Val Ile Cys Val
115 120 125

Ile Trp Leu Tyr Thr Ala Pro Pro Ser Ser Tyr Arg Asn Gln Glu Leu
130 135 140

Glu Asp Glu Ile Ile Phe Ile Thr Cys His Glu Gly Ser Leu Met Ala
145 150 155 160

Leu Gly Phe Leu Ile Gly Tyr Thr Cys Leu Leu Ala Ala Ile Cys Phe
165 170 175

Phe Phe Ala Phe Lys Ser Arg Lys Leu Pro Glu Asn Phe Asn Glu Ala
180 185 190

Lys Phe Ile Thr Phe Ser Met Leu Ile Phe Phe Ile Val Trp Ile Ser
195 200 205

Phe Ile Pro Ala Tyr Ala Ser Thr Tyr Gly Lys Phe Val Ser Ala Val
210 215 220

Glu Val Ile Ala Ile Leu Ala Ala Ser Phe Gly Leu Leu Ala Cys Ile
225 230 235 240

Phe Phe Asn Lys Ile Tyr Ile Ile Leu Phe
245 250

<210> 7
<211> 267
<212> PRT
<213> Human

<400> 7

Leu Phe Ile Ser Val Ser Val Leu Ser Ser Leu Gly Ile Val Leu Ala
1 5 10 15

Val Val Cys Leu Ser Phe Asn Ile Tyr Asn Ser His Val Arg Tyr Ile
20 25 30

Gln Asn Ser Gln Pro Asn Leu Asn Asn Leu Thr Ala Val Gly Cys Ser
35 40 45

Leu Ala Leu Ala Ala Val Phe Pro Leu Gly Leu Asp Gly Tyr His Ile
50 55 60

```
Gly Arg Asn Gln Phe Pro Phe Val Cys Gln Ala Arg Leu Trp Leu Leu
65                  70                  75                  80

Gly Leu Gly Phe Ser Leu Gly Tyr Gly Ser Met Phe Thr Lys Ile Trp
                85                  90                  95

Trp Val His Thr Val Phe Thr Lys Lys Glu Glu Lys Lys Glu Trp Arg
            100                 105                 110

Lys Thr Leu Glu Pro Trp Lys Leu Tyr Ala Thr Val Gly Leu Leu Val
        115                 120                 125

Gly Met Asp Val Leu Thr Leu Ala Ile Trp Gln Ile Val Asp Pro Leu
    130                 135                 140

His Arg Thr Ile Glu Thr Phe Ala Lys Glu Glu Pro Lys Glu Asp Ile
145                 150                 155                 160

Asp Val Ser Ile Leu Pro Gln Leu Glu His Cys Ser Ser Arg Lys Met
                165                 170                 175

Asn Thr Trp Leu Gly Ile Phe Tyr Gly Tyr Lys Gly Leu Leu Leu Leu
            180                 185                 190

Leu Gly Ile Phe Leu Ala Tyr Glu Thr Lys Ser Val Ser Thr Glu Lys
        195                 200                 205

Ile Asn Asp His Arg Ala Val Gly Met Ala Ile Tyr Asn Val Ala Val
    210                 215                 220

Leu Cys Leu Ile Thr Ala Pro Val Thr Met Ile Leu Ser Ser Gln Gln
225                 230                 235                 240

Asp Ala Ala Phe Ala Phe Ala Ser Leu Ala Ile Val Phe Ser Ser Tyr
                245                 250                 255

Ile Thr Leu Val Val Leu Phe Val Pro Lys Met
            260                 265
```

<210> 8
<211> 267
<212> PRT
<213> Human

<400> 8

```
Leu Phe Ile Ser Val Ser Val Leu Ser Ser Leu Gly Ile Val Leu Ala
 1               5                  10                  15

Val Val Cys Leu Ser Phe Asn Ile Tyr Asn Ser His Val Arg Tyr Ile
            20                  25                  30

Gln Asn Ser Gln Pro Asn Leu Asn Asn Leu Thr Ala Val Gly Cys Ser
        35                  40                  45
```

```
Leu Ala Leu Ala Ala Val Phe Pro Leu Gly Leu Asp Gly Tyr His Ile
    50                  55                  60

Gly Arg Asn Gln Phe Pro Phe Val Cys Gln Ala Arg Leu Trp Leu Leu
65                  70                  75                  80

Gly Leu Gly Phe Ser Leu Gly Tyr Gly Ser Met Phe Thr Lys Ile Trp
                85                  90                  95

Trp Val His Thr Val Phe Thr Lys Lys Glu Glu Lys Lys Glu Trp Arg
            100                 105                 110

Lys Thr Leu Glu Pro Trp Lys Leu Tyr Ala Thr Val Gly Leu Leu Val
        115                 120                 125

Gly Met Asp Val Leu Thr Leu Ala Ile Trp Gln Ile Val Asp Pro Leu
    130                 135                 140

His Arg Thr Ile Glu Thr Phe Ala Lys Glu Glu Pro Lys Glu Asp Ile
145                 150                 155                 160

Asp Val Ser Ile Leu Pro Gln Leu Glu His Cys Ser Ser Arg Lys Met
                165                 170                 175

Asn Thr Trp Leu Gly Ile Phe Tyr Gly Tyr Lys Gly Leu Leu Leu Leu
            180                 185                 190

Leu Gly Ile Phe Leu Ala Tyr Glu Thr Lys Ser Val Ser Thr Glu Lys
        195                 200                 205

Ile Asn Asp His Arg Ala Val Gly Met Ala Ile Tyr Asn Val Ala Val
    210                 215                 220

Leu Cys Leu Ile Thr Ala Pro Val Thr Met Ile Leu Ser Ser Gln Gln
225                 230                 235                 240


Asp Ala Ala Phe Ala Phe Ala Ser Leu Ala Ile Val Phe Ser Ser Tyr
                245                 250                 255

Ile Thr Leu Val Val Leu Phe Val Pro Lys Met
            260                 265
```

<210> 9
<211> 264
<212> PRT
<213> Human

<400> 9

```
Leu Tyr Ser Ile Leu Ser Ala Leu Thr Ile Leu Gly Met Ile Met Ala
 1               5                  10                  15
```

```
Ser Ala Phe Leu Phe Phe Asn Ile Lys Asn Arg Asn Gln Lys Leu Ile
            20                  25                  30

Lys Met Ser Ser Pro Tyr Met Asn Asn Leu Ile Ile Leu Gly Gly Met
        35                  40                  45

Leu Ser Tyr Ala Ser Ile Phe Leu Phe Gly Leu Asp Gly Ser Phe Val
    50                  55                  60

Ser Glu Lys Thr Phe Glu Thr Leu Cys Thr Val Arg Thr Trp Ile Leu
65                  70                  75                  80

Thr Val Gly Tyr Thr Thr Ala Phe Gly Ala Met Phe Ala Lys Thr Trp
                85                  90                  95

Arg Val His Ala Ile Phe Lys Asn Val Lys Met Lys Lys Lys Ile Ile
            100                 105                 110

Lys Asp Gln Lys Leu Leu Val Ile Val Gly Gly Met Leu Leu Ile Asp
        115                 120                 125

Leu Cys Ile Leu Ile Cys Trp Gln Ala Val Asp Pro Leu Arg Arg Thr
    130                 135                 140

Val Glu Lys Tyr Ser Met Glu Pro Asp Pro Ala Gly Arg Asp Ile Ser
145                 150                 155                 160

Ile Arg Pro Leu Leu Glu His Cys Glu Asn Thr His Met Thr Ile Trp
                165                 170                 175

Leu Gly Ile Val Tyr Ala Tyr Lys Gly Leu Leu Met Leu Phe Gly Cys
            180                 185                 190

Phe Leu Ala Trp Glu Thr Arg Asn Val Ser Ile Pro Ala Leu Asn Asp
        195                 200                 205


Ser Lys Tyr Ile Gly Met Ser Val Tyr Asn Val Gly Ile Met Cys Ile
    210                 215                 220

Ile Gly Ala Ala Val Ser Phe Leu Thr Arg Asp Gln Pro Asn Val Gln
225                 230                 235                 240

Phe Cys Ile Val Ala Leu Val Ile Ile Phe Cys Ser Thr Ile Thr Leu
                245                 250                 255

Cys Leu Val Phe Val Pro Lys Leu
            260
```

<210> 10
<211> 260
<212> PRT
<213> Human

<400> 10

```
Ala Val Val Pro Val Phe Val Ala Ile Leu Gly Ile Ile Ala Thr Thr
 1               5                  10                  15

Phe Val Ile Val Thr Phe Val Arg Tyr Asn Asp Thr Pro Ile Val Arg
            20                  25                  30

Ala Ser Gly Arg Glu Leu Ser Tyr Val Leu Leu Thr Gly Ile Phe Leu
        35                  40                  45

Cys Tyr Ser Ile Thr Phe Leu Met Ile Ala Ala Pro Asp Thr Ile Ile
    50                  55                  60

Cys Ser Phe Arg Arg Val Phe Leu Gly Leu Gly Met Cys Phe Ser Tyr
65                  70                  75                  80

Ala Ala Leu Leu Thr Lys Thr Asn Arg Ile His Arg Ile Phe Glu Gln
                85                  90                  95

Gly Lys Lys Ser Val Thr Ala Pro Lys Phe Ile Ser Pro Ala Ser Gln
            100                 105                 110

Leu Val Ile Thr Phe Ser Leu Ile Ser Val Gln Leu Leu Gly Val Phe
        115                 120                 125

Val Trp Phe Val Val Asp Pro Pro His Ile Ile Ile Asp Tyr Gly Glu
    130                 135                 140

Gln Arg Thr Leu Asp Pro Glu Lys Ala Arg Gly Val Leu Lys Cys Asp
145                 150                 155                 160

Ile Ser Asp Leu Ser Leu Ile Cys Ser Leu Gly Tyr Ser Ile Leu Leu
                165                 170                 175


Met Val Thr Cys Thr Val Tyr Ala Ile Lys Thr Arg Gly Val Pro Glu
            180                 185                 190

Thr Phe Asn Glu Ala Lys Pro Ile Gly Phe Thr Met Tyr Thr Thr Cys
        195                 200                 205

Ile Ile Trp Leu Ala Phe Ile Pro Ile Phe Phe Gly Thr Ala Gln Ser
    210                 215                 220

Ala Glu Lys Met Tyr Ile Gln Thr Thr Thr Leu Thr Val Ser Met Ser
225                 230                 235                 240

Leu Ser Ala Ser Val Ser Leu Gly Met Leu Tyr Met Pro Lys Val Tyr
                245                 250                 255

Ile Ile Ile Phe
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<210> 11
<211> 216
<212> PRT
<213> Human

<400> 11

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His Ala Phe Lys Val Ala Ala Arg Ala Thr Leu Arg Arg Ser Asn Val
            20                  25                  30

Ser Arg Lys Arg Ser Ser Ser Leu Gly Gly Ser Thr Gly Ser Thr Pro
        35                  40                  45

Ser Ser Ser Ile Ser Ser Lys Ser Asn Ser Glu Asp Pro Phe Pro Gln
    50                  55                  60

Pro Glu Arg Gln Lys Gln Gln Gln Pro Leu Ala Leu Thr Gln Gln Glu
65                  70                  75                  80

Gln Gln Gln Gln Pro Leu Thr Leu Pro Gln Gln Gln Arg Ser Gln Gln
                85                  90                  95

Gln Pro Arg Cys Lys Gln Lys Val Ile Phe Gly Ser Gly Thr Val Thr
            100                 105                 110

Phe Ser Leu Ser Phe Asp Glu Pro Gln Lys Asn Ala Met Ala His Gly
        115                 120                 125

Asn Ser Thr His Gln Asn Ser Leu Glu Ala Gln Lys Ser Ser Asp Thr
    130                 135                 140

Leu Thr Arg His Gln Pro Leu Leu Pro Leu Gln Cys Gly Glu Thr Asp
145                 150                 155                 160

Leu Asp Leu Thr Val Gln Glu Thr Gly Leu Gln Gly Pro Val Gly Gly
                165                 170                 175

Asp Gln Arg Pro Glu Val Glu Asp Pro Glu Glu Leu Ser Pro Ala Leu
            180                 185                 190

Val Val Ser Ser Ser Gln Ser Phe Val Ile Ser Gly Gly Gly Ser Thr
        195                 200                 205

Val Thr Glu Asn Val Val Asn Ser
    210                 215
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<212> PRT
<213> Human

<400> 12

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Arg Arg Leu Ile Thr Arg Gly Glu Trp Gln Ser Glu Ala Gln Asp Thr
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Met Lys Thr Gly Ser Ser Thr Asn Asn Asn Glu Glu Glu Lys Ser Arg
            20                  25                  30

Leu Leu Glu Lys Glu Asn Arg Glu Leu Glu Lys Ile Ile Ala Glu Lys
        35                  40                  45

Glu Glu Arg Val Ser Glu Leu Arg His Gln Leu Gln Ser Arg Gln Gln
    50                  55                  60

Leu Arg Ser Arg Arg His Pro Pro Thr Pro Pro Glu Pro Ser Gly Gly
65                  70                  75                  80

Leu Pro Arg Gly Pro Pro Glu Pro Pro Asp Arg Leu Ser Cys Asp Gly
                85                  90                  95

Ser Arg Val His Leu Leu Tyr Lys
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<210> 13
<211> 104
<212> PRT
<213> Human

<400> 13

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Arg Arg Leu Ile Thr Arg Gly Glu Trp Gln Ser Glu Ala Gln Asp Thr
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Met Lys Thr Gly Ser Ser Thr Asn Asn Asn Glu Glu Glu Lys Ser Arg
            20                  25                  30

Leu Leu Glu Lys Glu Asn Arg Glu Leu Glu Lys Ile Ile Ala Glu Lys
        35                  40                  45

Glu Glu Arg Val Ser Glu Leu Arg His Gln Leu Gln Ser Arg Gln Gln
    50                  55                  60

Leu Arg Ser Arg Arg His Pro Pro Thr Pro Pro Glu Pro Ser Gly Gly
65                  70                  75                  80

Leu Pro Arg Gly Pro Pro Glu Pro Pro Asp Arg Leu Ser Cys Asp Gly
                85                  90                  95

Ser Arg Val His Leu Leu Tyr Lys
            100
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<210> 14
<211> 197
<212> PRT
<213> Human

<400> 14

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Ile Thr Leu Arg Thr Asn Pro Asp Ala Ala Thr Gln Asn Arg Arg Phe
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Gln Phe Thr Gln Asn Gln Lys Lys Glu Asp Ser Lys Thr Ser Thr Ser
            20                  25                  30

Val Thr Ser Val Asn Gln Ala Ser Thr Ser Arg Leu Glu Gly Leu Gln
        35                  40                  45

Ser Glu Asn His Arg Leu Arg Met Lys Ile Thr Glu Leu Asp Lys Asp
    50                  55                  60

Leu Glu Glu Val Thr Met Gln Leu Gln Asp Thr Pro Glu Lys Thr Thr
65                  70                  75                  80

Tyr Ile Lys Gln Asn His Tyr Gln Glu Leu Asn Asp Ile Leu Asn Leu
                85                  90                  95

Gly Asn Phe Thr Glu Ser Thr Asp Gly Gly Lys Ala Ile Leu Lys Asn
            100                 105                 110


His Leu Asp Gln Asn Pro Gln Leu Gln Trp Asn Thr Thr Glu Pro Ser
        115                 120                 125

Arg Thr Cys Lys Asp Pro Ile Glu Asp Ile Asn Ser Pro Glu His Ile
    130                 135                 140

Gln Arg Arg Leu Ser Leu Gln Leu Pro Ile Leu His His Ala Tyr Leu
145                 150                 155                 160

Pro Ser Ile Gly Gly Val Asp Ala Ser Cys Val Ser Pro Cys Val Ser
                165                 170                 175

Pro Thr Ala Ser Pro Arg His Arg His Val Pro Pro Ser Phe Arg Val
            180                 185                 190

Met Val Ser Gly Leu
        195
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<212> PRT
<213> Human

<400> 15

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Val Thr Ala Ala Thr Met Gln Ser Lys Leu Ile Gln Lys Gly Asn Asp
            20                  25                  30

Arg Pro Asn Gly Glu Val Lys Ser Glu Leu Cys Glu Ser Leu Glu Thr
        35                  40                  45

Asn Ser Lys Ser Ser Val Glu Phe Pro Met Val Lys Ser Gly Ser Thr
    50                  55                  60

Ser
65
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<212> PRT
<213> Human

<400> 16

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Glu Glu Lys Thr Ala Ala Arg Ile Asp Gln Glu Ile Asn Arg Ile Leu
            20                  25                  30

Leu Glu Gln Lys Lys Gln Glu Arg Glu Glu Leu Lys Leu Leu Leu Leu
        35                  40                  45

Gly Pro Gly Glu Ser Gly Lys Ser Thr Phe Ile Lys Gln Met Arg Ile
    50                  55                  60

Ile His Gly Val Gly Tyr Ser Glu Glu Asp Arg Arg Ala Phe Arg Leu
65                  70                  75                  80

Leu Ile Tyr Gln Asn Ile Phe Val Ser Met Gln Ala Met Ile Asp Ala
                85                  90                  95

Met Asp Arg Leu Gln Ile Pro Phe Ser Arg Pro Asp Ser Lys Gln His
            100                 105                 110

Ala Ser Leu Val Met Thr Gln Asp Pro Tyr Lys Val Ser Thr Phe Glu
        115                 120                 125

Lys Pro Tyr Ala Val Ala Met Gln Tyr Leu Trp Arg Asp Ala Gly Ile
    130                 135                 140
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Arg Ala Cys Tyr Glu Arg Arg Arg Glu Phe His Leu Leu Asp Ser Ala
145                 150                 155                 160

Val Tyr Tyr Leu Ser His Leu Glu Arg Ile Ser Glu Asp Ser Tyr Ile
                165                 170                 175

Pro Thr Ala Gln Asp Val Leu Arg Ser Arg Met Pro Thr Thr Gly Ile
            180                 185                 190

Asn Glu Tyr Cys Phe Ser Val Lys Lys Thr Lys Leu Arg Ile Val Asp
        195                 200                 205

Val Gly Gly Gln Arg Ser Glu Arg Arg Lys Trp Ile His Cys Phe Glu
    210                 215                 220

Asn Val Ile Ala Leu Ile Tyr Leu Ala Ser Leu Ser Glu Tyr Asp Gln
225                 230                 235                 240

Cys Leu Glu Glu Asn Asp Gln Glu Asn Arg Met Glu Glu Ser Leu Ala
                245                 250                 255

Leu Phe Ser Thr Ile Leu Glu Leu Pro Trp Phe Lys Ser Thr Ser Val
            260                 265                 270

Ile Leu Phe Leu Asn Lys Thr Asp Ile Leu Glu Asp Lys Ile His Thr
        275                 280                 285

Ser His Leu Ala Thr Tyr Phe Pro Ser Phe Gln Gly Pro Arg Arg Asp
    290                 295                 300


Ala Glu Ala Ala Lys Ser Phe Ile Leu Asp Met Tyr Ala Arg Val Tyr
305                 310                 315                 320

Ala Ser Cys Ala Glu Pro Gln Asp Gly Gly Arg Lys Gly Ser Arg Ala
                325                 330                 335

Arg Arg Phe Phe Ala His Phe Thr Cys Ala Thr Asp Thr Gln Ser Val
            340                 345                 350

Arg Ser Val Phe Lys Asp Val Arg Asp Ser Val Leu Ala Arg Tyr Leu
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Asp Glu Ile Asn Leu Leu
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<210> 17
<211> 374
<212> PRT
<213> Human

<400> 17

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Met Ala Arg Ser Leu Thr Trp Arg Cys Cys Pro Trp Cys Leu Thr Glu
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Asp Glu Lys Ala Ala Ala Arg Val Asp Gln Glu Ile Asn Arg Ile Leu
            20                  25                  30

Leu Glu Gln Lys Lys Gln Asp Arg Gly Glu Leu Lys Leu Leu Leu Leu
        35                  40                  45

Gly Pro Gly Glu Ser Gly Lys Ser Thr Phe Ile Lys Gln Met Arg Ile
    50                  55                  60

Ile His Gly Ala Gly Tyr Ser Glu Glu Glu Arg Lys Gly Phe Arg Pro
65                  70                  75                  80

Leu Val Tyr Gln Asn Ile Phe Val Ser Met Arg Ala Met Ile Glu Ala
                85                  90                  95

Met Glu Arg Leu Gln Ile Pro Phe Ser Arg Pro Glu Ser Lys His His
            100                 105                 110

Ala Ser Leu Val Met Ser Gln Asp Pro Tyr Lys Val Thr Thr Phe Glu
        115                 120                 125

Lys Arg Tyr Ala Ala Ala Met Gln Trp Leu Trp Arg Asp Ala Gly Ile
    130                 135                 140

Arg Ala Cys Tyr Glu Arg Arg Arg Glu Phe His Leu Leu Asp Ser Ala
145                 150                 155                 160

Val Tyr Tyr Leu Ser His Leu Glu Arg Ile Thr Glu Glu Gly Tyr Val
                165                 170                 175

Pro Thr Ala Gln Asp Val Leu Arg Ser Arg Met Pro Thr Thr Gly Ile
            180                 185                 190

Asn Glu Tyr Cys Phe Ser Val Gln Lys Thr Asn Leu Arg Ile Val Asp
        195                 200                 205

Val Gly Gly Gln Lys Ser Glu Arg Lys Lys Trp Ile His Cys Phe Glu
    210                 215                 220

Asn Val Ile Ala Leu Ile Tyr Leu Ala Ser Leu Ser Glu Tyr Asp Gln
225                 230                 235                 240

Cys Leu Glu Glu Asn Asn Gln Glu Asn Arg Met Lys Glu Ser Leu Ala
                245                 250                 255

Leu Phe Gly Thr Ile Leu Glu Leu Pro Trp Phe Lys Ser Thr Ser Val
            260                 265                 270
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Ile Leu Phe Leu Asn Lys Thr Asp Ile Leu Glu Glu Lys Ile Pro Thr
        275                 280                 285

Ser His Leu Ala Thr Tyr Phe Pro Ser Phe Gln Gly Pro Lys Gln Asp
    290                 295                 300

Ala Glu Ala Ala Lys Arg Phe Ile Leu Asp Met Tyr Thr Arg Met Tyr
305                 310                 315                 320

Thr Gly Cys Val Asp Gly Pro Glu Gly Ser Lys Lys Gly Ala Arg Ser
                325                 330                 335

Arg Arg Leu Phe Ser His Tyr Thr Cys Ala Thr Asp Thr Gln Asn Ile
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Asp Glu Ile Asn Leu Leu
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<210> 18
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<213> Human

<400> 19

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<213> Human

<400> 20

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Val Val Leu Phe Val Pro Lys Met Arg Arg Leu Ile Thr Arg Gly Glu
    850                 855                 860

Trp Gln Ser Glu Thr Gln Asp Thr Met Lys Thr Gly Ser Ser Thr Asn
```

865 870 875 880

Asn Asn Glu Glu Glu Lys Ser Arg Leu Leu Glu Lys Glu Asn Arg Glu
885 890 895

Leu Glu Lys Ile Ile Ala Glu Lys Glu Glu Arg Val Ser Glu Leu Arg
900 905 910

His Gln Leu Gln Ser Arg Gln Gln Leu Arg Ser Arg Arg His Pro Pro
915 920 925

Thr Pro Pro Asp Pro Ser Gly Gly Leu Pro Arg Gly Pro Ser Glu Pro
930 935 940

Pro Asp Arg Leu Ser Cys Asp Gly Ser Arg Val His Leu Leu Tyr Lys
945 950 955 960

<210> 25
<211> 844
<212> PRT
<213> Rat

<400> 25

Met Gly Pro Gly Gly Pro Cys Thr Pro Val Gly Trp Pro Leu Pro Leu
1 5 10 15

Leu Leu Val Met Ala Ala Gly Val Ala Pro Val Trp Ala Ser His Ser
20 25 30

Pro His Leu Pro Arg Pro His Pro Arg Val Pro Pro His Pro Ser Ser
35 40 45

Glu Arg Arg Ala Val Tyr Ile Gly Ala Leu Phe Pro Met Ser Gly Gly
50 55 60

Trp Pro Gly Gly Gln Ala Cys Gln Pro Ala Val Glu Met Ala Leu Glu
65 70 75 80

Asp Val Asn Ser Arg Arg Asp Ile Leu Pro Asp Tyr Glu Leu Lys Leu
85 90 95

Ile His His Asp Ser Lys Cys Asp Pro Gly Gln Ala Thr Lys Tyr Leu
100 105 110

Tyr Glu Leu Leu Tyr Asn Asp Pro Ile Lys Ile Ile Leu Met Pro Gly
115 120 125

Cys Ser Ser Val Ser Thr Leu Val Ala Glu Ala Ala Arg Met Trp Asn
130 135 140

Leu Ile Val Leu Ser Tyr Gly Ser Ser Ser Pro Ala Leu Ser Asn Arg
145 150 155 160

Gln Arg Phe Pro Thr Phe Phe Arg Thr His Pro Ser Ala Thr Leu His

```
                165                 170                 175

Asn Pro Thr Arg Val Lys Leu Phe Glu Lys Trp Gly Trp Lys Lys Ile
            180                 185                 190

Ala Thr Ile Gln Gln Thr Thr Glu Val Phe Thr Ser Thr Leu Asp Asp
        195                 200                 205

Leu Glu Glu Arg Val Lys Glu Ala Gly Ile Glu Ile Thr Phe Arg Gln
    210                 215                 220

Ser Phe Phe Ser Asp Pro Ala Val Pro Val Lys Asn Leu Lys Arg Gln
225                 230                 235                 240

Asp Ala Arg Ile Ile Val Gly Leu Phe Tyr Glu Thr Glu Ala Arg Lys
                245                 250                 255

Val Phe Cys Glu Val Tyr Lys Glu Arg Leu Phe Gly Lys Lys Tyr Val
            260                 265                 270


Trp Phe Leu Ile Gly Trp Tyr Ala Asp Asn Trp Phe Lys Thr Tyr Asp
        275                 280                 285

Pro Ser Ile Asn Cys Thr Val Glu Glu Met Thr Glu Ala Val Glu Gly
    290                 295                 300

His Ile Thr Thr Glu Ile Val Met Leu Asn Pro Ala Asn Thr Arg Ser
305                 310                 315                 320

Ile Ser Asn Met Thr Ser Gln Glu Phe Val Glu Lys Leu Thr Lys Arg
                325                 330                 335

Leu Lys Arg His Pro Glu Glu Thr Gly Gly Phe Gln Glu Ala Pro Leu
            340                 345                 350

Ala Tyr Asp Ala Ile Trp Ala Leu Ala Leu Ala Leu Asn Lys Thr Ser
        355                 360                 365

Gly Gly Gly Gly Arg Ser Gly Val Arg Leu Glu Asp Phe Asn Tyr Asn
    370                 375                 380

Asn Gln Thr Ile Thr Asp Gln Ile Tyr Arg Ala Met Asn Ser Ser Ser
385                 390                 395                 400

Phe Glu Gly Val Ser Gly His Val Val Phe Asp Ala Ser Gly Ser Arg
                405                 410                 415

Met Ala Trp Thr Leu Ile Glu Gln Leu Gln Gly Gly Ser Tyr Lys Lys
            420                 425                 430

Ile Gly Tyr Tyr Asp Ser Thr Lys Asp Asp Leu Ser Trp Ser Lys Thr
        435                 440                 445

Asp Lys Trp Ile Gly Gly Ser Pro Pro Ala Asp Gln Ile Leu Val Ile
    450                 455                 460
```

```
Lys Thr Phe Arg Phe Leu Ser Gln Lys Leu Phe Ile Ser Val Ser Val
465                 470                 475                 480

Leu Ser Ser Leu Gly Ile Val Leu Ala Val Val Cys Leu Ser Phe Asn
                485                 490                 495

Ile Tyr Asn Ser His Val Arg Tyr Ile Gln Asn Ser Gln Pro Asn Leu
            500                 505                 510

Asn Asn Leu Thr Ala Val Gly Cys Ser Leu Ala Leu Ala Ala Val Phe
        515                 520                 525

Pro Leu Gly Leu Asp Gly Tyr His Ile Gly Arg Ser Gln Phe Pro Phe
    530                 535                 540

Val Cys Gln Ala Arg Leu Trp Leu Leu Gly Leu Gly Phe Ser Leu Gly
545                 550                 555                 560


Tyr Gly Ser Met Phe Thr Lys Ile Trp Trp Val His Thr Val Phe Thr
                565                 570                 575

Lys Lys Glu Glu Lys Lys Glu Trp Arg Lys Thr Leu Glu Pro Trp Lys
            580                 585                 590

Leu Tyr Ala Thr Val Gly Leu Leu Val Gly Met Asp Val Leu Thr Leu
        595                 600                 605

Ala Ile Trp Gln Ile Val Asp Pro Leu His Arg Thr Ile Glu Thr Phe
    610                 615                 620

Ala Lys Glu Glu Pro Lys Glu Asp Ile Asp Val Ser Ile Leu Pro Gln
625                 630                 635                 640

Leu Glu His Cys Ser Ser Lys Lys Met Asn Thr Trp Leu Gly Ile Phe
                645                 650                 655

Tyr Gly Tyr Lys Gly Leu Leu Leu Leu Leu Gly Ile Phe Leu Ala Tyr
            660                 665                 670

Glu Thr Lys Ser Val Ser Thr Glu Lys Ile Asn Asp His Arg Ala Val
        675                 680                 685

Gly Met Ala Ile Tyr Asn Val Ala Val Leu Cys Leu Ile Thr Ala Pro
    690                 695                 700

Val Thr Met Ile Leu Ser Ser Gln Gln Asp Ala Ala Phe Ala Phe Ala
705                 710                 715                 720

Ser Leu Ala Ile Val Phe Ser Ser Tyr Ile Thr Leu Val Val Leu Phe
                725                 730                 735

Val Pro Lys Met Arg Arg Leu Ile Thr Arg Gly Glu Trp Gln Ser Glu
            740                 745                 750

Thr Gln Asp Thr Met Lys Thr Gly Ser Ser Thr Asn Asn Asn Glu Glu
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```
        755                 760                 765

Glu Lys Ser Arg Leu Leu Glu Lys Glu Asn Arg Glu Leu Glu Lys Ile
    770                 775                 780

Ile Ala Glu Lys Glu Glu Arg Val Ser Glu Leu Arg His Gln Leu Gln
785                 790                 795                 800

Ser Arg Gln Gln Leu Arg Ser Arg Arg His Pro Pro Thr Pro Pro Asp
                805                 810                 815

Pro Ser Gly Gly Leu Pro Arg Gly Pro Ser Glu Pro Pro Asp Arg Leu
            820                 825                 830

Ser Cys Asp Gly Ser Arg Val His Leu Leu Tyr Lys
        835                 840
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<210> 26
<211> 2616
<212> DNA
<213> Human

<400> 26

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<210> 27
<211> 824
<212> PRT
<213> Human

<400> 27

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            20                  25                  30

Val Leu Gly Gly Leu Phe Pro Val His Gln Lys Gly Gly Pro Ala Glu
        35                  40                  45

Asp Cys Gly Pro Val Asn Glu His Arg Gly Ile Gln Arg Leu Glu Ala
    50                  55                  60

Met Leu Phe Ala Leu Asp Arg Ile Asn Arg Asp Pro His Leu Leu Pro
65                  70                  75                  80

Gly Val Arg Leu Gly Ala His Ile Leu Asp Ser Cys Ser Lys Asp Thr
                85                  90                  95

His Ala Leu Glu Gln Ala Leu Asp Phe Val Arg Ala Ser Leu Ser Arg
            100                 105                 110

Gly Ala Asp Gly Ser Arg His Ile Cys Pro Asp Gly Ser Tyr Ala Thr
        115                 120                 125

His Gly Asp Ala Pro Thr Ala Ile Thr Gly Val Ile Gly Gly Ser Tyr
    130                 135                 140

Ser Asp Val Ser Ile Gln Val Ala Asn Leu Leu Arg Leu Phe Gln Ile
145                 150                 155                 160

Pro Gln Ile Ser Tyr Ala Ser Thr Ser Ala Lys Leu Ser Asp Lys Ser
                165                 170                 175

Arg Tyr Asp Tyr Phe Ala Arg Thr Val Pro Pro Asp Phe Phe Gln Ala
```

```
            180                 185                 190

Lys Ala Met Ala Glu Ile Leu Arg Phe Phe Asn Trp Thr Tyr Val Ser
        195                 200                 205

Thr Glu Ala Ser Glu Gly Asp Tyr Gly Glu Thr Gly Ile Glu Ala Phe
    210                 215                 220

Glu Leu Glu Ala Arg Ala Arg Asn Ile Cys Val Ala Thr Ser Glu Lys
225                 230                 235                 240

Val Gly Arg Ala Met Ser Arg Ala Ala Phe Glu Gly Val Val Arg Ala
                245                 250                 255

Leu Leu Gln Lys Pro Ser Ala Arg Val Ala Val Leu Phe Thr Arg Ser
            260                 265                 270

Glu Asp Ala Arg Glu Leu Leu Ala Ala Ser Gln Arg Leu Asn Ala Ser
        275                 280                 285

Phe Thr Trp Val Ala Ser Asp Gly Trp Gly Ala Leu Glu Ser Val Val
    290                 295                 300

Ala Gly Ser Glu Gly Ala Ala Glu Gly Ala Ile Thr Ile Glu Leu Ala
305                 310                 315                 320

Ser Tyr Pro Ile Ser Asp Phe Ala Ser Tyr Phe Gln Ser Leu Asp Pro
                325                 330                 335

Trp Asn Asn Ser Arg Asn Pro Trp Phe Arg Glu Phe Trp Glu Gln Arg
            340                 345                 350

Phe Arg Cys Ser Phe Arg Gln Arg Asp Cys Ala Ala His Ser Leu Arg
        355                 360                 365

Ala Val Pro Phe Glu Gln Glu Ser Lys Ile Met Phe Val Val Asn Ala
    370                 375                 380

Val Tyr Ala Met Ala His Ala Leu His Asn Met His Arg Ala Leu Cys
385                 390                 395                 400

Pro Asn Thr Thr Arg Leu Cys Asp Ala Met Arg Pro Val Asn Gly Arg
                405                 410                 415

Arg Leu Tyr Lys Asp Phe Val Leu Asn Val Lys Phe Asp Ala Pro Phe
            420                 425                 430

Arg Pro Ala Asp Thr His Asn Glu Val Arg Phe Asp Arg Phe Gly Asp
        435                 440                 445

Gly Ile Gly Arg Tyr Asn Ile Phe Thr Tyr Leu Arg Ala Gly Ser Gly
    450                 455                 460

Arg Tyr Arg Tyr Gln Lys Val Gly Tyr Trp Ala Glu Gly Leu Thr Leu
465                 470                 475                 480

Asp Thr Ser Leu Ile Pro Trp Ala Ser Pro Ser Ala Gly Pro Leu Ala
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```
                485                 490                 495

Ala Ser Arg Cys Ser Glu Pro Cys Leu Gln Asn Glu Val Lys Ser Val
            500                 505                 510

Gln Pro Gly Glu Val Cys Cys Trp Leu Cys Ile Pro Cys Gln Pro Tyr
        515                 520                 525

Glu Tyr Arg Leu Asp Glu Phe Thr Cys Ala Asp Cys Gly Leu Gly Tyr
    530                 535                 540


Trp Pro Asn Ala Ser Leu Thr Gly Cys Phe Glu Leu Pro Gln Glu Tyr
545                 550                 555                 560

Ile Arg Trp Gly Asp Ala Trp Ala Val Gly Pro Val Thr Ile Ala Cys
                565                 570                 575

Leu Gly Ala Leu Ala Thr Leu Phe Val Leu Gly Val Phe Val Arg His
            580                 585                 590

Asn Ala Thr Pro Val Val Lys Ala Ser Gly Arg Glu Leu Cys Tyr Ile
        595                 600                 605

Leu Leu Gly Gly Val Phe Leu Cys Tyr Cys Met Thr Phe Ile Phe Ile
    610                 615                 620

Ala Lys Pro Ser Thr Ala Val Cys Thr Leu Arg Arg Leu Gly Leu Gly
625                 630                 635                 640

Thr Ala Phe Ser Val Cys Tyr Ser Ala Leu Leu Thr Lys Thr Asn Arg
                645                 650                 655

Ile Ala Arg Ile Phe Gly Gly Ala Arg Glu Gly Ala Gln Arg Pro Arg
            660                 665                 670

Phe Ile Ser Pro Ala Ser Gln Val Ala Ile Cys Leu Ala Leu Ile Ser
        675                 680                 685

Gly Gln Leu Leu Ile Val Val Ala Trp Leu Val Val Glu Ala Pro Gly
    690                 695                 700

Thr Gly Lys Glu Thr Ala Pro Glu Arg Arg Glu Val Val Thr Leu Arg
705                 710                 715                 720

Cys Asn His Arg Asp Ala Ser Met Leu Gly Ser Leu Ala Tyr Asn Val
                725                 730                 735

Leu Leu Ile Ala Leu Cys Thr Leu Tyr Ala Phe Asn Thr Arg Lys Cys
            740                 745                 750

Pro Glu Asn Phe Asn Glu Ala Lys Phe Ile Gly Phe Thr Met Tyr Thr
        755                 760                 765

Thr Cys Ile Ile Trp Leu Ala Leu Leu Pro Ile Phe Tyr Val Thr Ser
    770                 775                 780
```

```
Ser Asp Tyr Arg Val Gln Thr Thr Thr Met Cys Val Ser Val Ser Leu
785                 790                 795                 800

Ser Gly Ser Val Val Leu Gly Cys Leu Phe Ala Pro Lys Leu His Ile
                805                 810                 815

Ile Leu Phe Gln Pro Gln Lys Asn
            820
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<210> 28
<211> 1077
<212> DNA
<213> Artificial Sequence

<220>
<223> Chimeric Gqi5

<400> 28

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<210> 29
<211> 359
<212> PRT
<213> Artificial Sequence

<220>
<223> Chimeric Gqi5

<400> 29

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Glu Ala Arg Arg Ile Asn Asp Glu Ile Glu Arg Gln Leu Arg Arg Asp
            20                  25                  30

Lys Arg Asp Ala Arg Arg Glu Leu Lys Leu Leu Leu Leu Gly Thr Gly
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```
        35                  40                  45

Glu Ser Gly Lys Ser Thr Phe Ile Lys Gln Met Arg Ile Ile His Gly
    50                  55                  60

Ser Gly Tyr Ser Asp Glu Asp Lys Arg Gly Phe Thr Lys Leu Val Tyr
65                  70                  75                  80

Gln Asn Ile Phe Thr Ala Met Gln Ala Met Ile Arg Ala Met Asp Thr
                85                  90                  95

Leu Lys Ile Pro Tyr Lys Tyr Glu His Asn Lys Ala His Ala Gln Leu
            100                 105                 110

Val Arg Glu Val Asp Val Glu Lys Val Ser Ala Phe Glu Asn Pro Tyr
        115                 120                 125

Val Asp Ala Ile Lys Ser Leu Trp Asn Asp Pro Gly Ile Gln Glu Cys
    130                 135                 140

Tyr Asp Arg Arg Arg Glu Tyr Gln Leu Ser Asp Ser Thr Lys Tyr Tyr
145                 150                 155                 160

Leu Asn Asp Leu Asp Arg Val Ala Asp Pro Ala Tyr Leu Pro Thr Gln
                165                 170                 175

Gln Asp Val Leu Arg Val Arg Val Pro Thr Thr Gly Ile Ile Glu Tyr
            180                 185                 190

Pro Phe Asp Leu Gln Ser Val Ile Phe Arg Met Val Asp Val Gly Gly
        195                 200                 205

Gln Arg Ser Glu Arg Arg Lys Trp Ile His Cys Phe Glu Asn Val Thr
    210                 215                 220

Ser Ile Met Phe Leu Val Ala Leu Ser Glu Tyr Asp Gln Val Leu Val
225                 230                 235                 240

Glu Ser Asp Asn Glu Asn Arg Met Glu Glu Ser Lys Ala Leu Phe Arg
                245                 250                 255

Thr Ile Ile Thr Tyr Pro Trp Phe Gln Asn Ser Ser Val Ile Leu Phe
            260                 265                 270

Leu Asn Lys Lys Asp Leu Leu Glu Glu Lys Ile Met Tyr Ser His Leu
        275                 280                 285

Val Asp Tyr Phe Pro Glu Tyr Asp Gly Pro Gln Arg Asp Ala Gln Ala
    290                 295                 300

Ala Arg Glu Phe Ile Leu Lys Met Phe Val Asp Leu Asn Pro Asp Ser
305                 310                 315                 320

Asp Lys Ile Ile Tyr Ser His Phe Thr Cys Ala Thr Asp Thr Glu Asn
                325                 330                 335

Ile Arg Phe Val Phe Ala Ala Val Lys Asp Thr Ile Leu Gln Leu Asn
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Leu Lys Asp Cys Gly Leu Phe
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<210> 30
<211> 2751
<212> DNA
<213> Artificial Sequence

<220>
<223> Chimeric hCAR/hmGluR2

<400> 30

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gtgtcagtca gcctcagcgg ctccgtggtg cttggctgcc tctttgcgcc caagctgcac    2580
atcatcctct tccagccgca gaagaacgtg gttagccacc gggcacccac cagccgcttt    2640

ggcagtgctg ctgccagggc cagctccagc cttggccaag ggtctggctc ccagtttgtc    2700
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<210> 31
<211> 917
<212> PRT
<213> Artificial Sequence

<220>
<223> Chimeric hCAR/hmGluR2

<400> 31

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Met Ala Phe Tyr Ser Cys Cys Trp Val Leu Leu Ala Leu Thr Trp His
 1               5                  10                  15

Thr Ser Ala Tyr Gly Pro Asp Gln Arg Ala Gln Lys Lys Gly Asp Ile
            20                  25                  30

Ile Leu Gly Gly Leu Phe Pro Ile His Phe Gly Val Ala Ala Lys Asp
        35                  40                  45

Gln Asp Leu Lys Ser Arg Pro Glu Ser Val Glu Cys Ile Arg Tyr Asn
    50                  55                  60

Phe Arg Gly Phe Arg Trp Leu Gln Ala Met Ile Phe Ala Ile Glu Glu
65                  70                  75                  80

Ile Asn Ser Ser Pro Ala Leu Leu Pro Asn Leu Thr Leu Gly Tyr Arg
                85                  90                  95

Ile Phe Asp Thr Cys Asn Thr Val Ser Lys Ala Leu Glu Ala Thr Leu
            100                 105                 110

Ser Phe Val Ala Gln Asn Lys Ile Asp Ser Leu Asn Leu Asp Glu Phe
        115                 120                 125

Cys Asn Cys Ser Glu His Ile Pro Ser Thr Ile Ala Val Val Gly Ala
    130                 135                 140

Thr Gly Ser Gly Val Ser Thr Ala Val Ala Asn Leu Leu Gly Leu Phe
145                 150                 155                 160

Tyr Ile Pro Gln Val Ser Tyr Ala Ser Ser Ser Arg Leu Leu Ser Asn
                165                 170                 175

Lys Asn Gln Phe Lys Ser Phe Leu Arg Thr Ile Pro Asn Asp Glu His
            180                 185                 190

Gln Ala Thr Ala Met Ala Asp Ile Ile Glu Tyr Phe Arg Trp Asn Trp
        195                 200                 205
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```
Val Gly Thr Ile Ala Ala Asp Asp Asp Tyr Gly Arg Pro Gly Ile Glu
    210                 215                 220

Lys Phe Arg Glu Glu Ala Glu Glu Arg Asp Ile Cys Ile Asp Phe Ser
225                 230                 235                 240

Glu Leu Ile Ser Gln Tyr Ser Asp Glu Glu Glu Ile Gln His Val Val
                245                 250                 255

Glu Val Ile Gln Asn Ser Thr Ala Lys Val Ile Val Val Phe Ser Ser
            260                 265                 270

Gly Pro Asp Leu Glu Pro Leu Ile Lys Glu Ile Val Arg Arg Asn Ile
        275                 280                 285

Thr Gly Lys Ile Trp Leu Ala Ser Glu Ala Trp Ala Ser Ser Ser Leu
    290                 295                 300

Ile Ala Met Pro Gln Tyr Phe His Val Val Gly Gly Thr Ile Gly Phe
305                 310                 315                 320

Ala Leu Lys Ala Gly Gln Ile Pro Gly Phe Arg Glu Phe Leu Lys Lys
                325                 330                 335

Val His Pro Arg Lys Ser Val His Asn Gly Phe Ala Lys Glu Phe Trp
            340                 345                 350

Glu Glu Thr Phe Asn Cys His Leu Gln Glu Gly Ala Lys Gly Pro Leu
        355                 360                 365

Pro Val Asp Thr Phe Leu Arg Gly His Glu Glu Ser Gly Asp Arg Phe
    370                 375                 380

Ser Asn Ser Ser Thr Ala Phe Arg Pro Leu Cys Thr Gly Asp Glu Asn
385                 390                 395                 400

Ile Ser Ser Val Glu Thr Pro Tyr Ile Asp Tyr Thr His Leu Arg Ile
                405                 410                 415

Ser Tyr Asn Val Tyr Leu Ala Val Tyr Ser Ile Ala His Ala Leu Gln
            420                 425                 430

Asp Ile Tyr Thr Cys Leu Pro Gly Arg Gly Leu Phe Thr Asn Gly Ser
        435                 440                 445

Cys Ala Asp Ile Lys Lys Val Glu Ala Trp Gln Val Leu Lys His Leu
    450                 455                 460

Arg His Leu Asn Phe Thr Asn Asn Met Gly Glu Gln Val Thr Phe Asp
465                 470                 475                 480

Glu Cys Gly Asp Leu Val Gly Asn Tyr Ser Ile Ile Asn Trp His Leu
                485                 490                 495
```

```
Ser Pro Glu Asp Gly Ser Ile Val Phe Lys Glu Val Gly Tyr Tyr Asn
            500                 505                 510

Val Tyr Ala Lys Lys Gly Glu Arg Leu Phe Ile Asn Glu Glu Lys Ile
        515                 520                 525

Leu Trp Ser Gly Phe Ser Arg Glu Val Pro Phe Ser Asn Cys Ser Arg
    530                 535                 540

Asp Cys Leu Ala Gly Thr Arg Lys Gly Ile Ile Glu Gly Glu Pro Thr
545                 550                 555                 560

Cys Cys Phe Glu Cys Val Glu Cys Pro Asp Gly Glu Tyr Ser Asp Glu
                565                 570                 575

Thr Asp Ala Ser Ala Cys Asn Lys Cys Pro Asp Asp Phe Trp Ser Asn
            580                 585                 590

Glu Asn His Thr Ser Cys Phe Glu Leu Pro Gln Glu Tyr Ile Arg Trp
        595                 600                 605

Gly Asp Ala Trp Ala Val Gly Pro Val Thr Ile Ala Cys Leu Gly Ala
    610                 615                 620

Leu Ala Thr Leu Phe Val Leu Gly Val Phe Val Arg His Asn Ala Thr
625                 630                 635                 640

Pro Val Val Lys Ala Ser Gly Arg Glu Leu Cys Tyr Ile Leu Leu Gly
                645                 650                 655

Gly Val Phe Leu Cys Tyr Cys Met Thr Phe Ile Phe Ile Ala Lys Pro
            660                 665                 670

Ser Thr Ala Val Cys Thr Leu Arg Arg Leu Gly Leu Gly Thr Ala Phe
        675                 680                 685

Ser Val Cys Tyr Ser Ala Leu Leu Thr Lys Thr Asn Arg Ile Ala Arg
    690                 695                 700

Ile Phe Gly Gly Ala Arg Glu Gly Ala Gln Arg Pro Arg Phe Ile Ser
705                 710                 715                 720

Pro Ala Ser Gln Val Ala Ile Cys Leu Ala Leu Ile Ser Gly Gln Leu
                725                 730                 735

Leu Ile Val Val Ala Trp Leu Val Val Glu Ala Pro Gly Thr Gly Lys
            740                 745                 750

Glu Thr Ala Pro Glu Arg Arg Glu Val Val Thr Leu Arg Cys Asn His
        755                 760                 765

Arg Asp Ala Ser Met Leu Gly Ser Leu Ala Tyr Asn Val Leu Leu Ile
    770                 775                 780


Ala Leu Cys Thr Leu Tyr Ala Phe Asn Thr Arg Lys Cys Pro Glu Asn
785                 790                 795                 800
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```
Phe Asn Glu Ala Lys Phe Ile Gly Phe Thr Met Tyr Thr Thr Cys Ile
                805                 810                 815

Ile Trp Leu Ala Leu Leu Pro Ile Phe Tyr Val Thr Ser Ser Asp Tyr
            820                 825                 830

Arg Val Gln Thr Thr Thr Met Cys Val Ser Val Ser Leu Ser Gly Ser
        835                 840                 845

Val Val Leu Gly Cys Leu Phe Ala Pro Lys Leu His Ile Ile Leu Phe
    850                 855                 860

Gln Pro Gln Lys Asn Val Val Ser His Arg Ala Pro Thr Ser Arg Phe
865                 870                 875                 880

Gly Ser Ala Ala Ala Arg Ala Ser Ser Ser Leu Gly Gln Gly Ser Gly
                885                 890                 895

Ser Gln Phe Val Pro Thr Val Cys Asn Gly Arg Glu Val Val Asp Ser
            900                 905                 910

Thr Thr Ser Ser Leu
        915
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<210> 32
<211> 3831
<212> DNA
<213> Artificial Sequence

<220>
<223> Chimeric phCaR/hmGluR2*Gqi5

<400> 32

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<210> 33
<211> 1276
<212> PRT
<213> Artificial Sequence

<220>
<223> Chimeric phCaR/hmGluR2*Gqi5

<400> 33

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Thr Ser Ala Tyr Gly Pro Asp Gln Arg Ala Gln Lys Lys Gly Asp Ile
            20                  25                  30

Ile Leu Gly Gly Leu Phe Pro Ile His Phe Gly Val Ala Ala Lys Asp
        35                  40                  45

Gln Asp Leu Lys Ser Arg Pro Glu Ser Val Glu Cys Ile Arg Tyr Asn
    50                  55                  60

Phe Arg Gly Phe Arg Trp Leu Gln Ala Met Ile Phe Ala Ile Glu Glu
65                  70                  75                  80

Ile Asn Ser Ser Pro Ala Leu Leu Pro Asn Leu Thr Leu Gly Tyr Arg
                85                  90                  95

Ile Phe Asp Thr Cys Asn Thr Val Ser Lys Ala Leu Glu Ala Thr Leu
            100                 105                 110

Ser Phe Val Ala Gln Asn Lys Ile Asp Ser Leu Asn Leu Asp Glu Phe
        115                 120                 125

Cys Asn Cys Ser Glu His Ile Pro Ser Thr Ile Ala Val Val Gly Ala
    130                 135                 140

Thr Gly Ser Gly Val Ser Thr Ala Val Ala Asn Leu Leu Gly Leu Phe
145                 150                 155                 160

Tyr Ile Pro Gln Val Ser Tyr Ala Ser Ser Ser Arg Leu Leu Ser Asn
                165                 170                 175

Lys Asn Gln Phe Lys Ser Phe Leu Arg Thr Ile Pro Asn Asp Glu His
            180                 185                 190

Gln Ala Thr Ala Met Ala Asp Ile Ile Glu Tyr Phe Arg Trp Asn Trp
        195                 200                 205

Val Gly Thr Ile Ala Ala Asp Asp Asp Tyr Gly Arg Pro Gly Ile Glu
    210                 215                 220

Lys Phe Arg Glu Glu Ala Glu Glu Arg Asp Ile Cys Ile Asp Phe Ser
225                 230                 235                 240

Glu Leu Ile Ser Gln Tyr Ser Asp Glu Glu Glu Ile Gln His Val Val
                245                 250                 255
```

```
Glu Val Ile Gln Asn Ser Thr Ala Lys Val Ile Val Val Phe Ser Ser
            260                 265                 270

Gly Pro Asp Leu Glu Pro Leu Ile Lys Glu Ile Val Arg Arg Asn Ile
        275                 280                 285

Thr Gly Lys Ile Trp Leu Ala Ser Glu Ala Trp Ala Ser Ser Ser Leu
    290                 295                 300

Ile Ala Met Pro Gln Tyr Phe His Val Val Gly Gly Thr Ile Gly Phe
305                 310                 315                 320

Ala Leu Lys Ala Gly Gln Ile Pro Gly Phe Arg Glu Phe Leu Lys Lys
                325                 330                 335

Val His Pro Arg Lys Ser Val His Asn Gly Phe Ala Lys Glu Phe Trp
            340                 345                 350

Glu Glu Thr Phe Asn Cys His Leu Gln Glu Gly Ala Lys Gly Pro Leu
        355                 360                 365

Pro Val Asp Thr Phe Leu Arg Gly His Glu Glu Ser Gly Asp Arg Phe
    370                 375                 380

Ser Asn Ser Ser Thr Ala Phe Arg Pro Leu Cys Thr Gly Asp Glu Asn
385                 390                 395                 400

Ile Ser Ser Val Glu Thr Pro Tyr Ile Asp Tyr Thr His Leu Arg Ile
                405                 410                 415

Ser Tyr Asn Val Tyr Leu Ala Val Tyr Ser Ile Ala His Ala Leu Gln
            420                 425                 430

Asp Ile Tyr Thr Cys Leu Pro Gly Arg Gly Leu Phe Thr Asn Gly Ser
        435                 440                 445

Cys Ala Asp Ile Lys Lys Val Glu Ala Trp Gln Val Leu Lys His Leu
    450                 455                 460

Arg His Leu Asn Phe Thr Asn Asn Met Gly Glu Gln Val Thr Phe Asp
465                 470                 475                 480

Glu Cys Gly Asp Leu Val Gly Asn Tyr Ser Ile Ile Asn Trp His Leu
                485                 490                 495

Ser Pro Glu Asp Gly Ser Ile Val Phe Lys Glu Val Gly Tyr Tyr Asn
            500                 505                 510

Val Tyr Ala Lys Lys Gly Glu Arg Leu Phe Ile Asn Glu Glu Lys Ile
        515                 520                 525


Leu Trp Ser Gly Phe Ser Arg Glu Val Pro Phe Ser Asn Cys Ser Arg
    530                 535                 540

Asp Cys Leu Ala Gly Thr Arg Lys Gly Ile Ile Glu Gly Glu Pro Thr
```

```
545                 550                 555                 560

Cys Cys Phe Glu Cys Val Glu Cys Pro Asp Gly Glu Tyr Ser Asp Glu
                565                 570                 575

Thr Asp Ala Ser Ala Cys Asn Lys Cys Pro Asp Asp Phe Trp Ser Asn
            580                 585                 590

Glu Asn His Thr Ser Cys Phe Glu Leu Pro Gln Glu Tyr Ile Arg Trp
        595                 600                 605

Gly Asp Ala Trp Ala Val Gly Pro Val Thr Ile Ala Cys Leu Gly Ala
    610                 615                 620

Leu Ala Thr Leu Phe Val Leu Gly Val Phe Val Arg His Asn Ala Thr
625                 630                 635                 640

Pro Val Val Lys Ala Ser Gly Arg Glu Leu Cys Tyr Ile Leu Leu Gly
                645                 650                 655

Gly Val Phe Leu Cys Tyr Cys Met Thr Phe Ile Phe Ile Ala Lys Pro
            660                 665                 670

Ser Thr Ala Val Cys Thr Leu Arg Arg Leu Gly Leu Gly Thr Ala Phe
        675                 680                 685

Ser Val Cys Tyr Ser Ala Leu Leu Thr Lys Thr Asn Arg Ile Ala Arg
    690                 695                 700

Ile Phe Gly Gly Ala Arg Glu Gly Ala Gln Arg Pro Arg Phe Ile Ser
705                 710                 715                 720

Pro Ala Ser Gln Val Ala Ile Cys Leu Ala Leu Ile Ser Gly Gln Leu
                725                 730                 735

Leu Ile Val Val Ala Trp Leu Val Val Glu Ala Pro Gly Thr Gly Lys
            740                 745                 750

Glu Thr Ala Pro Glu Arg Arg Glu Val Val Thr Leu Arg Cys Asn His
        755                 760                 765

Arg Asp Ala Ser Met Leu Gly Ser Leu Ala Tyr Asn Val Leu Leu Ile
    770                 775                 780

Ala Leu Cys Thr Leu Tyr Ala Phe Asn Thr Arg Lys Cys Pro Glu Asn
785                 790                 795                 800

Phe Asn Glu Ala Lys Phe Ile Gly Phe Thr Met Tyr Thr Thr Cys Ile
                805                 810                 815


Ile Trp Leu Ala Leu Leu Pro Ile Phe Tyr Val Thr Ser Ser Asp Tyr
            820                 825                 830

Arg Val Gln Thr Thr Thr Met Cys Val Ser Val Ser Leu Ser Gly Ser
        835                 840                 845
```

```
Val Val Leu Gly Cys Leu Phe Ala Pro Lys Leu His Ile Ile Leu Phe
    850                 855                 860

Gln Pro Gln Lys Asn Val Val Ser His Arg Ala Pro Thr Ser Arg Phe
865                 870                 875                 880

Gly Ser Ala Ala Ala Arg Ala Ser Ser Ser Leu Gly Gln Gly Ser Gly
                885                 890                 895

Ser Gln Phe Val Pro Thr Val Cys Asn Gly Arg Glu Val Val Asp Ser
            900                 905                 910

Thr Thr Ser Ser Leu Met Thr Leu Glu Ser Ile Met Ala Cys Cys Leu
        915                 920                 925

Ser Glu Glu Ala Lys Glu Ala Arg Arg Ile Asn Asp Glu Ile Glu Arg
    930                 935                 940

Gln Leu Arg Arg Asp Lys Arg Asp Ala Arg Arg Glu Leu Lys Leu Leu
945                 950                 955                 960

Leu Leu Gly Thr Gly Glu Ser Gly Lys Ser Thr Phe Ile Lys Gln Met
                965                 970                 975

Arg Ile Ile His Gly Ser Gly Tyr Ser Asp Glu Asp Lys Arg Gly Phe
            980                 985                 990

Thr Lys Leu Val Tyr Gln Asn Ile Phe Thr Ala Met Gln Ala Met Ile
        995                 1000                1005

Arg Ala Met Asp Thr Leu Lys Ile Pro Tyr Lys Tyr Glu His Asn Lys
    1010                1015                1020

Ala His Ala Gln Leu Val Arg Glu Val Asp Val Glu Lys Val Ser Ala
1025                1030                1035                1040

Phe Glu Asn Pro Tyr Val Asp Ala Ile Lys Ser Leu Trp Asn Asp Pro
                1045                1050                1055

Gly Ile Gln Glu Cys Tyr Asp Arg Arg Arg Glu Tyr Gln Leu Ser Asp
            1060                1065                1070

Ser Thr Lys Tyr Tyr Leu Asn Asp Leu Asp Arg Val Ala Asp Pro Ala
        1075                1080                1085

Tyr Leu Pro Thr Gln Gln Asp Val Leu Arg Val Arg Val Pro Thr Thr
    1090                1095                1100


Gly Ile Ile Glu Tyr Pro Phe Asp Leu Gln Ser Val Ile Phe Arg Met
1105                1110                1115                1120

Val Asp Val Gly Gly Gln Arg Ser Glu Arg Arg Lys Trp Ile His Cys
                1125                1130                1135

Phe Glu Asn Val Thr Ser Ile Met Phe Leu Val Ala Leu Ser Glu Tyr
            1140                1145                1150
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```
Asp Gln Val Leu Val Glu Ser Asp Asn Glu Asn Arg Met Glu Glu Ser
        1155                1160                1165

Lys Ala Leu Phe Arg Thr Ile Ile Thr Tyr Pro Trp Phe Gln Asn Ser
    1170                1175                1180

Ser Val Ile Leu Phe Leu Asn Lys Lys Asp Leu Leu Glu Glu Lys Ile
1185                1190                1195                1200

Met Tyr Ser His Leu Val Asp Tyr Phe Pro Glu Tyr Asp Gly Pro Gln
                1205                1210                1215

Arg Asp Ala Gln Ala Ala Arg Glu Phe Ile Leu Lys Met Phe Val Asp
            1220                1225                1230

Leu Asn Pro Asp Ser Asp Lys Ile Ile Tyr Ser His Phe Thr Cys Ala
        1235                1240                1245

Thr Asp Thr Glu Asn Ile Arg Phe Val Phe Ala Ala Val Lys Asp Thr
    1250                1255                1260

Ile Leu Gln Leu Asn Leu Lys Asp Cys Gly Leu Phe
1265                1270                1275
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<210> 34
<211> 3105
<212> DNA
<213> Artificial Sequence

<220>
<223> Chimeric hmGluR2/hCaR

<400> 34

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gatctgaccg tccaggaaac aggtctgcaa ggacctgtgg gtggagacca gcggccagag    3000
gtggaggacc ctgaagagtt gtccccagca cttgtagtgt ccagttcaca gagctttgtc    3060
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<210> 35
<211> 1035
<212> PRT
<213> Artificial Sequence

<220>
<223> Chimeric hmGluR2/hCaR

<400> 35

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Met Gly Ser Leu Leu Ala Leu Pro Ala Leu Leu Leu Leu Trp Gly Ala
 1               5                  10                  15

Val Ala Glu Gly Pro Ala Lys Lys Val Leu Thr Leu Glu Gly Asp Leu
            20                  25                  30

Val Leu Gly Gly Leu Phe Pro Val His Gln Lys Gly Gly Pro Ala Glu
        35                  40                  45

Asp Cys Gly Pro Val Asn Glu His Arg Gly Ile Gln Arg Leu Glu Ala
```

```
    50                  55                  60

Met Leu Phe Ala Leu Asp Arg Ile Asn Arg Asp Pro His Leu Leu Pro
65                  70                  75                  80

Gly Val Arg Leu Gly Ala His Ile Leu Asp Ser Cys Ser Lys Asp Thr
                85                  90                  95

His Ala Leu Glu Gln Ala Leu Asp Phe Val Arg Ala Ser Leu Ser Arg
            100                 105                 110

Gly Ala Asp Gly Ser Arg His Ile Cys Pro Asp Gly Ser Tyr Ala Thr
        115                 120                 125

His Gly Asp Ala Pro Thr Ala Ile Thr Gly Val Ile Gly Gly Ser Tyr
    130                 135                 140

Ser Asp Val Ser Ile Gln Val Ala Asn Leu Leu Arg Leu Phe Gln Ile
145                 150                 155                 160

Pro Gln Ile Ser Tyr Ala Ser Thr Ser Ala Lys Leu Ser Asp Lys Ser
                165                 170                 175

Arg Tyr Asp Tyr Phe Ala Arg Thr Val Pro Pro Asp Phe Phe Gln Ala
            180                 185                 190

Lys Ala Met Ala Glu Ile Leu Arg Phe Phe Asn Trp Thr Tyr Val Ser
        195                 200                 205

Thr Val Ala Ser Glu Gly Asp Tyr Gly Glu Thr Gly Ile Glu Ala Phe
    210                 215                 220

Glu Leu Glu Ala Arg Ala Arg Asn Ile Cys Val Ala Thr Ser Glu Lys
225                 230                 235                 240

Val Gly Arg Ala Met Ser Arg Ala Ala Phe Glu Gly Val Val Arg Ala
                245                 250                 255

Leu Leu Gln Lys Pro Ser Ala Arg Val Ala Val Leu Phe Thr Arg Ser
            260                 265                 270


Glu Asp Ala Arg Glu Leu Leu Ala Ala Ser Gln Arg Leu Asn Ala Ser
        275                 280                 285

Phe Thr Trp Val Ala Ser Asp Gly Trp Gly Ala Leu Glu Ser Val Val
    290                 295                 300

Ala Gly Ser Glu Gly Ala Ala Glu Gly Ala Ile Thr Ile Glu Leu Ala
305                 310                 315                 320

Ser Tyr Pro Ile Ser Asp Phe Ala Ser Tyr Phe Gln Ser Leu Asp Pro
                325                 330                 335

Trp Asn Asn Ser Arg Asn Pro Trp Phe Arg Glu Phe Trp Glu Gln Arg
            340                 345                 350
```

```
Phe Arg Cys Ser Phe Arg Gln Arg Asp Cys Ala Ala His Ser Leu Arg
        355                 360                 365

Ala Val Pro Phe Glu Gln Glu Ser Lys Ile Met Phe Val Val Asn Ala
    370                 375                 380

Val Tyr Ala Met Ala His Ala Leu His Asn Met His Arg Ala Leu Cys
385                 390                 395                 400

Pro Asn Thr Thr Arg Leu Cys Asp Ala Met Arg Pro Val Asn Gly Arg
                405                 410                 415

Arg Leu Tyr Lys Asp Phe Val Leu Asn Val Lys Phe Asp Ala Pro Phe
            420                 425                 430

Arg Pro Ala Asp Thr His Asn Glu Val Arg Phe Asp Arg Phe Gly Asp
        435                 440                 445

Gly Ile Gly Arg Tyr Asn Ile Phe Thr Tyr Leu Arg Ala Gly Ser Gly
    450                 455                 460

Arg Tyr Arg Tyr Gln Lys Val Gly Tyr Trp Ala Glu Gly Leu Thr Leu
465                 470                 475                 480

Asp Thr Ser Leu Ile Pro Trp Ala Ser Pro Ser Ala Gly Pro Leu Pro
                485                 490                 495

Ala Ser Arg Cys Ser Glu Pro Cys Leu Gln Asn Glu Val Lys Ser Val
            500                 505                 510

Gln Pro Gly Glu Val Cys Cys Trp Leu Cys Ile Pro Cys Gln Pro Tyr
        515                 520                 525

Glu Tyr Arg Leu Asp Glu Phe Thr Cys Ala Asp Cys Gly Leu Gly Tyr
    530                 535                 540

Trp Pro Asn Ala Ser Leu Thr Gly Cys Phe Glu Leu Pro Gln Glu Tyr
545                 550                 555                 560


Ile Arg Trp Gly Asp Ala Trp Ala Val Gly Pro Val Thr Ile Ala Cys
                565                 570                 575

Leu Gly Ala Leu Ala Thr Leu Phe Val Leu Gly Val Phe Val Arg His
            580                 585                 590

Asn Ala Thr Pro Val Val Lys Ala Ser Gly Arg Glu Leu Cys Tyr Ile
        595                 600                 605

Leu Leu Gly Gly Val Phe Leu Cys Tyr Cys Met Thr Phe Ile Phe Ile
    610                 615                 620

Ala Lys Pro Ser Thr Ala Val Cys Thr Leu Arg Arg Leu Gly Leu Gly
625                 630                 635                 640

Thr Ala Phe Ser Val Cys Tyr Ser Ala Leu Leu Thr Lys Thr Asn Arg
```

```
                645                 650                 655

Ile Ala Arg Ile Phe Gly Gly Ala Arg Glu Gly Ala Gln Arg Pro Arg
            660                 665                 670

Phe Ile Ser Pro Ala Ser Gln Val Ala Ile Cys Leu Ala Leu Ile Ser
        675                 680                 685

Gly Gln Leu Leu Ile Val Val Ala Trp Leu Val Val Glu Ala Pro Gly
    690                 695                 700

Thr Gly Lys Glu Thr Ala Pro Glu Arg Arg Glu Val Val Thr Leu Arg
705                 710                 715                 720

Cys Asn His Arg Asp Ala Ser Met Leu Gly Ser Leu Ala Tyr Asn Val
                725                 730                 735

Leu Leu Ile Ala Leu Cys Thr Leu Tyr Ala Phe Lys Thr Arg Lys Cys
            740                 745                 750

Pro Glu Asn Phe Asn Glu Ala Lys Phe Ile Gly Phe Thr Met Tyr Thr
        755                 760                 765

Thr Cys Ile Ile Trp Leu Ala Phe Leu Pro Ile Phe Tyr Val Thr Ser
    770                 775                 780

Ser Asp Tyr Arg Val Gln Thr Thr Thr Met Cys Val Ser Val Ser Leu
785                 790                 795                 800

Ser Gly Ser Val Val Leu Gly Cys Leu Phe Ala Pro Lys Leu His Ile
                805                 810                 815

Ile Leu Phe Gln Pro Gln Lys Asn Thr Ile Glu Glu Val Arg Cys Ser
            820                 825                 830

Thr Ala Ala His Ala Phe Lys Val Ala Ala Arg Ala Thr Leu Arg Arg
        835                 840                 845


Ser Asn Val Ser Arg Lys Arg Ser Ser Ser Leu Gly Gly Ser Thr Gly
    850                 855                 860

Ser Thr Pro Ser Ser Ser Ile Ser Ser Lys Ser Asn Ser Glu Asp Pro
865                 870                 875                 880

Phe Pro Gln Pro Glu Arg Gln Lys Gln Gln Gln Pro Leu Ala Leu Thr
                885                 890                 895

Gln Gln Glu Gln Gln Gln Gln Pro Leu Thr Leu Pro Gln Gln Gln Arg
            900                 905                 910

Ser Gln Gln Gln Pro Arg Cys Lys Gln Lys Val Ile Phe Gly Ser Gly
        915                 920                 925

Thr Val Thr Phe Ser Leu Ser Phe Asp Glu Pro Gln Lys Asn Ala Met
    930                 935                 940
```

```
Ala His Gly Asn Ser Thr His Gln Asn Ser Leu Glu Ala Gln Lys Ser
945                 950                 955                 960

Ser Asp Thr Leu Thr Arg His Gln Pro Leu Leu Pro Leu Gln Cys Gly
                965                 970                 975

Glu Thr Asp Leu Asp Leu Thr Val Gln Glu Thr Gly Leu Gln Gly Pro
            980                 985                 990

Val Gly Gly Asp Gln Arg Pro Glu Val Glu Asp Pro Glu Glu Leu Ser
        995                 1000                1005

Pro Ala Leu Val Val Ser Ser Ser Gln Ser Phe Val Ile Ser Gly Gly
    1010                1015                1020

Gly Ser Thr Val Thr Glu Asn Val Val Asn Ser
1025                1030                1035
```

<210> 36
<211> 4185
<212> DNA
<213> Artificial Sequence

<220>
<223> Chimeric pmGluR2//CaR*G(qi5

<400> 36

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ccagccaaga aggtgctgac cctggaggga gacttggtgc tgggtgggct gttcccagtg     120
caccagaagg gcggcccagc agaggactgt ggtcctgtca atgagcaccg tggcatccag     180
cgcctggagg ccatgctttt tgcactggac cgcatcaacc gtgacccgca cctgctgcct     240
ggcgtgcgcc tgggtgcaca catcctcgac agttgctcca aggacacaca tgcgctggag     300
caggcactgg actttgtgcg tgcctcactc agccgtggtg ctgatggctc acgccacatc     360
tgccccgacg gctcttatgc gacccatggt gatgctccca ctgccatcac tggtgttatt     420
ggcggttcct acagtgatgt ctccatccag gtggccaacc tcttgaggct atttcagatc     480
ccacagatta gctacgcctc taccagtgcc aagctgagtg acaagtcccg ctatgactac     540
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cgagaattca ttctgaagat gttcgtggac ctgaacccag acagtgacaa aattatctac    4080
tcccacttca cgtgcgccac agacaccgag aatatccgct ttgtctttgc tgccgtcaag    4140
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<210> 37
<211> 1394
<212> PRT
<213> Artificial Sequence

<220>
<223> Chimeric pmGluR2//CaR*G(qi5

<400> 37

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Met Gly Ser Leu Leu Ala Leu Pro Ala Leu Leu Leu Leu Trp Gly Ala
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Val Ala Glu Gly Pro Ala Lys Lys Val Leu Thr Leu Glu Gly Asp Leu
            20                  25                  30

Val Leu Gly Gly Leu Phe Pro Val His Gln Lys Gly Gly Pro Ala Glu
        35                  40                  45

Asp Cys Gly Pro Val Asn Glu His Arg Gly Ile Gln Arg Leu Glu Ala
    50                  55                  60

Met Leu Phe Ala Leu Asp Arg Ile Asn Arg Asp Pro His Leu Leu Pro
65                  70                  75                  80

Gly Val Arg Leu Gly Ala His Ile Leu Asp Ser Cys Ser Lys Asp Thr
                85                  90                  95

His Ala Leu Glu Gln Ala Leu Asp Phe Val Arg Ala Ser Leu Ser Arg
            100                 105                 110

Gly Ala Asp Gly Ser Arg His Ile Cys Pro Asp Gly Ser Tyr Ala Thr
        115                 120                 125

His Gly Asp Ala Pro Thr Ala Ile Thr Gly Val Ile Gly Gly Ser Tyr
    130                 135                 140

Ser Asp Val Ser Ile Gln Val Ala Asn Leu Leu Arg Leu Phe Gln Ile
145                 150                 155                 160

Pro Gln Ile Ser Tyr Ala Ser Thr Ser Ala Lys Leu Ser Asp Lys Ser
                165                 170                 175

Arg Tyr Asp Tyr Phe Ala Arg Thr Val Pro Pro Asp Phe Phe Gln Ala
            180                 185                 190

Lys Ala Met Ala Glu Ile Leu Arg Phe Phe Asn Trp Thr Tyr Val Ser
        195                 200                 205

Thr Val Ala Ser Glu Gly Asp Tyr Gly Glu Thr Gly Ile Glu Ala Phe
    210                 215                 220

Glu Leu Glu Ala Arg Ala Arg Asn Ile Cys Val Ala Thr Ser Glu Lys
225                 230                 235                 240

Val Gly Arg Ala Met Ser Arg Ala Ala Phe Glu Gly Val Val Arg Ala
                245                 250                 255

Leu Leu Gln Lys Pro Ser Ala Arg Val Ala Val Leu Phe Thr Arg Ser
            260                 265                 270

Glu Asp Ala Arg Glu Leu Leu Ala Ala Ser Gln Arg Leu Asn Ala Ser
        275                 280                 285
```

```
Phe Thr Trp Val Ala Ser Asp Gly Trp Gly Ala Leu Glu Ser Val Val
    290                 295                 300

Ala Gly Ser Glu Gly Ala Ala Glu Gly Ala Ile Thr Ile Glu Leu Ala
305                 310                 315                 320

Ser Tyr Pro Ile Ser Asp Phe Ala Ser Tyr Phe Gln Ser Leu Asp Pro
                325                 330                 335

Trp Asn Asn Ser Arg Asn Pro Trp Phe Arg Glu Phe Trp Glu Gln Arg
            340                 345                 350

Phe Arg Cys Ser Phe Arg Gln Arg Asp Cys Ala Ala His Ser Leu Arg
        355                 360                 365

Ala Val Pro Phe Glu Gln Glu Ser Lys Ile Met Phe Val Val Asn Ala
    370                 375                 380

Val Tyr Ala Met Ala His Ala Leu His Asn Met His Arg Ala Leu Cys
385                 390                 395                 400

Pro Asn Thr Thr Arg Leu Cys Asp Ala Met Arg Pro Val Asn Gly Arg
                405                 410                 415

Arg Leu Tyr Lys Asp Phe Val Leu Asn Val Lys Phe Asp Ala Pro Phe
            420                 425                 430

Arg Pro Ala Asp Thr His Asn Glu Val Arg Phe Asp Arg Phe Gly Asp
        435                 440                 445


Gly Ile Gly Arg Tyr Asn Ile Phe Thr Tyr Leu Arg Ala Gly Ser Gly
    450                 455                 460

Arg Tyr Arg Tyr Gln Lys Val Gly Tyr Trp Ala Glu Gly Leu Thr Leu
465                 470                 475                 480

Asp Thr Ser Leu Ile Pro Trp Ala Ser Pro Ser Ala Gly Pro Leu Pro
                485                 490                 495

Ala Ser Arg Cys Ser Glu Pro Cys Leu Gln Asn Glu Val Lys Ser Val
            500                 505                 510

Gln Pro Gly Glu Val Cys Cys Trp Leu Cys Ile Pro Cys Gln Pro Tyr
        515                 520                 525

Glu Tyr Arg Leu Asp Glu Phe Thr Cys Ala Asp Cys Gly Leu Gly Tyr
    530                 535                 540

Trp Pro Asn Ala Ser Leu Thr Gly Cys Phe Glu Leu Pro Gln Glu Tyr
545                 550                 555                 560

Ile Arg Trp Gly Asp Ala Trp Ala Val Gly Pro Val Thr Ile Ala Cys
                565                 570                 575

Leu Gly Ala Leu Ala Thr Leu Phe Val Leu Gly Val Phe Val Arg His
            580                 585                 590
```

```
Asn Ala Thr Pro Val Val Lys Ala Ser Gly Arg Glu Leu Cys Tyr Ile
        595                 600                 605

Leu Leu Gly Gly Val Phe Leu Cys Tyr Cys Met Thr Phe Ile Phe Ile
    610                 615                 620

Ala Lys Pro Ser Thr Ala Val Cys Thr Leu Arg Arg Leu Gly Leu Gly
625                 630                 635                 640

Thr Ala Phe Ser Val Cys Tyr Ser Ala Leu Leu Thr Lys Thr Asn Arg
                645                 650                 655

Ile Ala Arg Ile Phe Gly Gly Ala Arg Glu Gly Ala Gln Arg Pro Arg
            660                 665                 670

Phe Ile Ser Pro Ala Ser Gln Val Ala Ile Cys Leu Ala Leu Ile Ser
        675                 680                 685

Gly Gln Leu Leu Ile Val Val Ala Trp Leu Val Val Glu Ala Pro Gly
    690                 695                 700

Thr Gly Lys Glu Thr Ala Pro Glu Arg Arg Glu Val Val Thr Leu Arg
705                 710                 715                 720

Cys Asn His Arg Asp Ala Ser Met Leu Gly Ser Leu Ala Tyr Asn Val
                725                 730                 735


Leu Leu Ile Ala Leu Cys Thr Leu Tyr Ala Phe Lys Thr Arg Lys Cys
            740                 745                 750

Pro Glu Asn Phe Asn Glu Ala Lys Phe Ile Gly Phe Thr Met Tyr Thr
        755                 760                 765

Thr Cys Ile Ile Trp Leu Ala Phe Leu Pro Ile Phe Tyr Val Thr Ser
    770                 775                 780

Ser Asp Tyr Arg Val Gln Thr Thr Thr Met Cys Val Ser Val Ser Leu
785                 790                 795                 800

Ser Gly Ser Val Val Leu Gly Cys Leu Phe Ala Pro Lys Leu His Ile
                805                 810                 815

Ile Leu Phe Gln Pro Gln Lys Asn Thr Ile Glu Glu Val Arg Cys Ser
            820                 825                 830

Thr Ala Ala His Ala Phe Lys Val Ala Ala Arg Ala Thr Leu Arg Arg
        835                 840                 845

Ser Asn Val Ser Arg Lys Arg Ser Ser Ser Leu Gly Gly Ser Thr Gly
    850                 855                 860

Ser Thr Pro Ser Ser Ser Ile Ser Ser Lys Ser Asn Ser Glu Asp Pro
865                 870                 875                 880

Phe Pro Gln Pro Glu Arg Gln Lys Gln Gln Gln Pro Leu Ala Leu Thr
```

```
                885                 890                 895

Gln Gln Glu Gln Gln Gln Gln Pro Leu Thr Leu Pro Gln Gln Gln Arg
            900                 905                 910

Ser Gln Gln Gln Pro Arg Cys Lys Gln Lys Val Ile Phe Gly Ser Gly
        915                 920                 925

Thr Val Thr Phe Ser Leu Ser Phe Asp Glu Pro Gln Lys Asn Ala Met
    930                 935                 940

Ala His Gly Asn Ser Thr His Gln Asn Ser Leu Glu Ala Gln Lys Ser
945                 950                 955                 960

Ser Asp Thr Leu Thr Arg His Gln Pro Leu Leu Pro Leu Gln Cys Gly
                965                 970                 975

Glu Thr Asp Leu Asp Leu Thr Val Gln Glu Thr Gly Leu Gln Gly Pro
            980                 985                 990

Val Gly Gly Asp Gln Arg Pro Glu Val Glu Asp Pro Glu Glu Leu Ser
        995                 1000                1005

Pro Ala Leu Val Val Ser Ser Ser Gln Ser Phe Val Ile Ser Gly Gly
    1010                1015                1020


Gly Ser Thr Val Thr Glu Asn Val Val Asn Ser Met Thr Leu Glu Ser
1025                1030                1035                1040

Ile Met Ala Cys Cys Leu Ser Glu Glu Ala Lys Glu Ala Arg Arg Ile
                1045                1050                1055

Asn Asp Glu Ile Glu Arg Gln Leu Arg Arg Asp Lys Arg Asp Ala Arg
            1060                1065                1070

Arg Glu Leu Lys Leu Leu Leu Leu Gly Thr Gly Glu Ser Gly Lys Ser
        1075                1080                1085

Thr Phe Ile Lys Gln Met Arg Ile Ile His Gly Ser Gly Tyr Ser Asp
    1090                1095                1100

Glu Asp Lys Arg Gly Phe Thr Lys Leu Val Tyr Gln Asn Ile Phe Thr
1105                1110                1115                1120

Ala Met Gln Ala Met Ile Arg Ala Met Asp Thr Leu Lys Ile Pro Tyr
                1125                1130                1135

Lys Tyr Glu His Asn Lys Ala His Ala Gln Leu Val Arg Glu Val Asp
            1140                1145                1150

Val Glu Lys Val Ser Ala Phe Glu Asn Pro Tyr Val Asp Ala Ile Lys
        1155                1160                1165

Ser Leu Trp Asn Asp Pro Gly Ile Gln Glu Cys Tyr Asp Arg Arg Arg
    1170                1175                1180
```

```
Glu Tyr Gln Leu Ser Asp Ser Thr Lys Tyr Tyr Leu Asn Asp Leu Asp
1185                1190                1195                1200

Arg Val Ala Asp Pro Ala Tyr Leu Pro Thr Gln Gln Asp Val Leu Arg
                1205                1210                1215

Val Arg Val Pro Thr Thr Gly Ile Ile Glu Tyr Pro Phe Asp Leu Gln
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Ser Val Ile Phe Arg Met Val Asp Val Gly Gly Gln Arg Ser Glu Arg
        1235                1240                1245

Arg Lys Trp Ile His Cys Phe Glu Asn Val Thr Ser Ile Met Phe Leu
    1250                1255                1260

Val Ala Leu Ser Glu Tyr Asp Gln Val Leu Val Glu Ser Asp Asn Glu
1265                1270                1275                1280

Asn Arg Met Glu Glu Ser Lys Ala Leu Phe Arg Thr Ile Ile Thr Tyr
                1285                1290                1295

Pro Trp Phe Gln Asn Ser Ser Val Ile Leu Phe Leu Asn Lys Lys Asp
            1300                1305                1310


Leu Leu Glu Glu Lys Ile Met Tyr Ser His Leu Val Asp Tyr Phe Pro
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Glu Tyr Asp Gly Pro Gln Arg Asp Ala Gln Ala Ala Arg Glu Phe Ile
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Leu Lys Met Phe Val Asp Leu Asn Pro Asp Ser Asp Lys Ile Ile Tyr
1345                1350                1355                1360

Ser His Phe Thr Cys Ala Thr Asp Thr Glu Asn Ile Arg Phe Val Phe
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Ala Ala Val Lys Asp Thr Ile Leu Gln Leu Asn Leu Lys Asp Cys Gly
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Leu Phe
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<210> 38
<211> 3177
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<220>
<223> Chimeric hmGluR8/hCaR

<400> 38

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<210> 39

<211> 1059
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<213> Artificial Sequence

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<223> Chimeric hmGluR8/hCaR

<400> 39

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Ser Gln Glu Tyr Ala His Ser Ile Arg Val Asp Gly Asp Ile Ile Leu
        35                  40                  45

Gly Gly Leu Phe Pro Val His Ala Lys Gly Glu Arg Gly Val Pro Cys
    50                  55                  60

Gly Glu Leu Lys Lys Glu Lys Gly Ile His Arg Leu Glu Ala Met Leu
65                  70                  75                  80

Tyr Ala Ile Asp Gln Ile Asn Lys Asp Pro Asp Leu Leu Ser Asn Ile
                85                  90                  95

Thr Leu Gly Val Arg Ile Leu Asp Thr Cys Ser Arg Asp Thr Tyr Ala
            100                 105                 110

Leu Glu Gln Ser Leu Thr Phe Val Gln Ala Leu Ile Glu Lys Asp Ala
        115                 120                 125

Ser Asp Val Lys Cys Ala Asn Gly Asp Pro Pro Ile Phe Thr Lys Pro
    130                 135                 140

Asp Lys Ile Ser Gly Val Ile Gly Ala Ala Ala Ser Ser Val Ser Ile
145                 150                 155                 160

Met Val Ala Asn Ile Leu Arg Leu Phe Lys Ile Pro Gln Ile Ser Tyr
                165                 170                 175

Ala Ser Thr Ala Pro Glu Leu Ser Asp Asn Thr Arg Tyr Asp Phe Phe
            180                 185                 190

Ser Arg Val Val Pro Pro Asp Ser Tyr Gln Ala Gln Ala Met Val Asp
        195                 200                 205

Ile Val Thr Ala Leu Gly Trp Asn Tyr Val Ser Thr Leu Ala Ser Glu
    210                 215                 220

Gly Asn Tyr Gly Glu Ser Gly Val Glu Ala Phe Thr Gln Ile Ser Arg
225                 230                 235                 240

Glu Ile Gly Gly Val Cys Ile Ala Gln Ser Gln Lys Ile Pro Arg Glu
                245                 250                 255
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Pro Arg Pro Gly Glu Phe Glu Lys Ile Ile Lys Arg Leu Leu Glu Thr
            260                 265                 270

Pro Asn Ala Arg Ala Val Ile Met Phe Ala Asn Glu Asp Asp Ile Arg
        275                 280                 285

Arg Ile Leu Glu Ala Ala Lys Lys Leu Asn Gln Ser Gly His Phe Leu
    290                 295                 300

Trp Ile Gly Ser Asp Ser Trp Gly Ser Lys Ile Ala Pro Val Tyr Gln
305                 310                 315                 320

Gln Glu Glu Ile Ala Glu Gly Ala Val Thr Ile Leu Pro Lys Arg Ala
                325                 330                 335

Ser Ile Asp Gly Phe Asp Arg Tyr Phe Arg Ser Arg Thr Leu Ala Asn
            340                 345                 350


Asn Arg Arg Asn Val Trp Phe Ala Glu Phe Trp Glu Glu Asn Phe Gly
        355                 360                 365

Cys Lys Leu Gly Ser His Gly Lys Arg Asn Ser His Ile Lys Lys Cys
    370                 375                 380

Thr Gly Leu Glu Arg Ile Ala Arg Asp Ser Ser Tyr Glu Gln Glu Gly
385                 390                 395                 400

Lys Val Gln Phe Val Ile Asp Ala Val Tyr Ser Met Ala Tyr Ala Leu
                405                 410                 415

His Asn Met His Lys Asp Leu Cys Pro Gly Tyr Ile Gly Leu Cys Pro
            420                 425                 430

Arg Met Ser Thr Ile Asp Gly Lys Glu Leu Leu Gly Tyr Ile Arg Ala
        435                 440                 445

Val Asn Phe Asn Gly Ser Ala Gly Thr Pro Val Thr Phe Asn Glu Asn
    450                 455                 460

Gly Asp Ala Pro Gly Arg Tyr Asp Ile Phe Gln Tyr Gln Ile Thr Asn
465                 470                 475                 480

Lys Ser Thr Glu Tyr Lys Val Ile Gly His Trp Thr Asn Gln Leu His
                485                 490                 495

Leu Lys Val Glu Asp Met Gln Trp Ala His Arg Glu His Thr His Pro
            500                 505                 510

Ala Ser Val Cys Ser Leu Pro Cys Lys Pro Gly Glu Arg Lys Lys Thr
        515                 520                 525

Val Lys Gly Val Pro Cys Cys Trp His Cys Glu Arg Cys Glu Gly Tyr
    530                 535                 540

Asn Tyr Gln Val Asp Glu Leu Ser Cys Glu Leu Cys Pro Leu Asp Gln
545                 550                 555                 560
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Arg Pro Asn Met Asn Arg Thr Gly Cys Gln Leu Ile Pro Ile Ile Lys
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Leu Glu Trp His Ser Pro Trp Ala Val Val Pro Val Phe Val Ala Ile
            580                 585                 590

Leu Gly Ile Ile Ala Thr Thr Phe Val Ile Val Thr Phe Val Arg Tyr
        595                 600                 605

Asn Asp Thr Pro Ile Val Arg Ala Ser Gly Arg Glu Leu Ser Tyr Val
    610                 615                 620

Leu Leu Thr Gly Ile Phe Leu Cys Tyr Ser Ile Thr Phe Leu Met Ile
625                 630                 635                 640

Ala Ala Pro Asp Thr Ile Ile Cys Ser Phe Arg Arg Val Phe Leu Gly
                645                 650                 655

Leu Gly Met Cys Phe Ser Tyr Ala Ala Leu Leu Thr Lys Thr Asn Arg
            660                 665                 670

Ile His Arg Ile Phe Glu Gln Gly Lys Lys Ser Val Thr Ala Pro Lys
        675                 680                 685

Phe Ile Ser Pro Ala Ser Gln Leu Val Ile Thr Phe Ser Leu Ile Ser
    690                 695                 700

Val Gln Leu Leu Gly Val Phe Val Trp Phe Val Val Asp Pro Pro His
705                 710                 715                 720

Ile Ile Ile Asp Tyr Gly Glu Gln Arg Thr Leu Asp Pro Glu Lys Ala
                725                 730                 735

Arg Gly Val Leu Lys Cys Asp Ile Ser Asp Leu Ser Leu Ile Cys Ser
            740                 745                 750

Leu Gly Tyr Ser Ile Leu Leu Met Val Thr Cys Thr Val Tyr Ala Ile
        755                 760                 765

Lys Thr Arg Gly Val Pro Glu Thr Phe Asn Glu Ala Lys Pro Ile Gly
    770                 775                 780

Phe Thr Met Tyr Thr Thr Cys Ile Ile Trp Leu Ala Phe Ile Pro Ile
785                 790                 795                 800

Phe Phe Gly Thr Ala Gln Ser Ala Glu Lys Met Tyr Ile Gln Thr Thr
                805                 810                 815

Thr Leu Thr Val Ser Met Ser Leu Ser Ala Ser Val Ser Leu Gly Met
            820                 825                 830

Leu Tyr Met Pro Lys Val Tyr Ile Ile Ile Phe His Pro Glu Gln Asn
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Thr Ile Glu Glu Val Arg Cys Ser Thr Ala Ala His Ala Phe Lys Val
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    850                 855                 860

Ala Ala Arg Ala Thr Leu Arg Arg Ser Asn Val Ser Arg Lys Arg Ser
865                 870                 875                 880

Ser Ser Leu Gly Gly Ser Thr Gly Ser Thr Pro Ser Ser Ser Ile Ser
                885                 890                 895

Ser Lys Ser Asn Ser Glu Asp Pro Phe Pro Gln Pro Glu Arg Gln Lys
            900                 905                 910

Gln Gln Gln Pro Leu Ala Leu Thr Gln Gln Glu Gln Gln Gln Gln Pro
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Leu Thr Leu Pro Gln Gln Gln Arg Ser Gln Gln Gln Pro Arg Cys Lys
    930                 935                 940

Gln Lys Val Ile Phe Gly Ser Gly Thr Val Thr Phe Ser Leu Ser Phe
945                 950                 955                 960

Asp Glu Pro Gln Lys Asn Ala Met Ala His Gly Asn Ser Thr His Gln
                965                 970                 975

Asn Ser Leu Glu Ala Gln Lys Ser Ser Asp Thr Leu Thr Arg His Gln
            980                 985                 990

Pro Leu Leu Pro Leu Gln Cys Gly Glu Thr Asp Leu Asp Leu Thr Val
        995                 1000                1005

Gln Glu Thr Gly Leu Gln Gly Pro Val Gly Gly Asp Gln Arg Pro Glu
    1010                1015                1020

Val Glu Asp Pro Glu Glu Leu Ser Pro Ala Leu Val Val Ser Ser Ser
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Gln Ser Phe Val Ile Ser Gly Gly Gly Ser Thr Val Thr Glu Asn Val
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Val Asn Ser
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<210> 40
<211> 4257
<212> DNA
<213> Artificial Sequence

<220>
<223> Chimeric mGluR8//CaR*G(qi5

<400> 40

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<210> 41
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<212> PRT
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<220>
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<400> 41

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20 25 30

Ser Gln Glu Tyr Ala His Ser Ile Arg Val Asp Gly Asp Ile Ile Leu
35 40 45

Gly Gly Leu Phe Pro Val His Ala Lys Gly Glu Arg Gly Val Pro Cys
50 55 60

Gly Glu Leu Lys Lys Glu Lys Gly Ile His Arg Leu Glu Ala Met Leu
65 70 75 80

Tyr Ala Ile Asp Gln Ile Asn Lys Asp Pro Asp Leu Leu Ser Asn Ile
85 90 95

Thr Leu Gly Val Arg Ile Leu Asp Thr Cys Ser Arg Asp Thr Tyr Ala
100 105 110

Leu Glu Gln Ser Leu Thr Phe Val Gln Ala Leu Ile Glu Lys Asp Ala
115 120 125

Ser Asp Val Lys Cys Ala Asn Gly Asp Pro Pro Ile Phe Thr Lys Pro
130 135 140

Asp Lys Ile Ser Gly Val Ile Gly Ala Ala Ala Ser Ser Val Ser Ile
145 150 155 160

Met Val Ala Asn Ile Leu Arg Leu Phe Lys Ile Pro Gln Ile Ser Tyr
165 170 175

Ala Ser Thr Ala Pro Glu Leu Ser Asp Asn Thr Arg Tyr Asp Phe Phe
180 185 190

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Ser Arg Val Val Pro Pro Asp Ser Tyr Gln Ala Gln Ala Met Val Asp
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Ile Val Thr Ala Leu Gly Trp Asn Tyr Val Ser Thr Leu Ala Ser Glu
    210                 215                 220


Gly Asn Tyr Gly Glu Ser Gly Val Glu Ala Phe Thr Gln Ile Ser Arg
225                 230                 235                 240

Glu Ile Gly Gly Val Cys Ile Ala Gln Ser Gln Lys Ile Pro Arg Glu
                245                 250                 255

Pro Arg Pro Gly Glu Phe Glu Lys Ile Ile Lys Arg Leu Leu Glu Thr
            260                 265                 270

Pro Asn Ala Arg Ala Val Ile Met Phe Ala Asn Glu Asp Asp Ile Arg
        275                 280                 285

Arg Ile Leu Glu Ala Ala Lys Lys Leu Asn Gln Ser Gly His Phe Leu
    290                 295                 300

Trp Ile Gly Ser Asp Ser Trp Gly Ser Lys Ile Ala Pro Val Tyr Gln
305                 310                 315                 320

Gln Glu Glu Ile Ala Glu Gly Ala Val Thr Ile Leu Pro Lys Arg Ala
                325                 330                 335

Ser Ile Asp Gly Phe Asp Arg Tyr Phe Arg Ser Arg Thr Leu Ala Asn
            340                 345                 350

Asn Arg Arg Asn Val Trp Phe Ala Glu Phe Trp Glu Glu Asn Phe Gly
        355                 360                 365

Cys Lys Leu Gly Ser His Gly Lys Arg Asn Ser His Ile Lys Lys Cys
    370                 375                 380

Thr Gly Leu Glu Arg Ile Ala Arg Asp Ser Ser Tyr Glu Gln Glu Gly
385                 390                 395                 400

Lys Val Gln Phe Val Ile Asp Ala Val Tyr Ser Met Ala Tyr Ala Leu
                405                 410                 415

His Asn Met His Lys Asp Leu Cys Pro Gly Tyr Ile Gly Leu Cys Pro
            420                 425                 430

Arg Met Ser Thr Ile Asp Gly Lys Glu Leu Leu Gly Tyr Ile Arg Ala
        435                 440                 445

Val Asn Phe Asn Gly Ser Ala Gly Thr Pro Val Thr Phe Asn Glu Asn
    450                 455                 460

Gly Asp Ala Pro Gly Arg Tyr Asp Ile Phe Gln Tyr Gln Ile Thr Asn
465                 470                 475                 480
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Lys Ser Thr Glu Tyr Lys Val Ile Gly His Trp Thr Asn Gln Leu His
                485                 490                 495

Leu Lys Val Glu Asp Met Gln Trp Ala His Arg Glu His Thr His Pro
            500                 505                 510

Ala Ser Val Cys Ser Leu Pro Cys Lys Pro Gly Glu Arg Lys Lys Thr
        515                 520                 525

Val Lys Gly Val Pro Cys Cys Trp His Cys Glu Arg Cys Glu Gly Tyr
    530                 535                 540

Asn Tyr Gln Val Asp Glu Leu Ser Cys Glu Leu Cys Pro Leu Asp Gln
545                 550                 555                 560

Arg Pro Asn Met Asn Arg Thr Gly Cys Gln Leu Ile Pro Ile Ile Lys
                565                 570                 575

Leu Glu Trp His Ser Pro Trp Ala Val Val Pro Val Phe Val Ala Ile
            580                 585                 590

Leu Gly Ile Ile Ala Thr Thr Phe Val Ile Val Thr Phe Val Arg Tyr
        595                 600                 605

Asn Asp Thr Pro Ile Val Arg Ala Ser Gly Arg Glu Leu Ser Tyr Val
    610                 615                 620

Leu Leu Thr Gly Ile Phe Leu Cys Tyr Ser Ile Thr Phe Leu Met Ile
625                 630                 635                 640

Ala Ala Pro Asp Thr Ile Ile Cys Ser Phe Arg Arg Val Phe Leu Gly
                645                 650                 655

Leu Gly Met Cys Phe Ser Tyr Ala Ala Leu Leu Thr Lys Thr Asn Arg
            660                 665                 670

Ile His Arg Ile Phe Glu Gln Gly Lys Lys Ser Val Thr Ala Pro Lys
        675                 680                 685

Phe Ile Ser Pro Ala Ser Gln Leu Val Ile Thr Phe Ser Leu Ile Ser
    690                 695                 700

Val Gln Leu Leu Gly Val Phe Val Trp Phe Val Val Asp Pro Pro His
705                 710                 715                 720

Ile Ile Ile Asp Tyr Gly Glu Gln Arg Thr Leu Asp Pro Glu Lys Ala
                725                 730                 735

Arg Gly Val Leu Lys Cys Asp Ile Ser Asp Leu Ser Leu Ile Cys Ser
            740                 745                 750

Leu Gly Tyr Ser Ile Leu Leu Met Val Thr Cys Thr Val Tyr Ala Ile
        755                 760                 765

Lys Thr Arg Gly Val Pro Glu Thr Phe Asn Glu Ala Lys Pro Ile Gly
    770                 775                 780
```

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Phe Thr Met Tyr Thr Thr Cys Ile Ile Trp Leu Ala Phe Ile Pro Ile
785                 790                 795                 800

Phe Phe Gly Thr Ala Gln Ser Ala Glu Lys Met Tyr Ile Gln Thr Thr
                805                 810                 815

Thr Leu Thr Val Ser Met Ser Leu Ser Ala Ser Val Ser Leu Gly Met
            820                 825                 830

Leu Tyr Met Pro Lys Val Tyr Ile Ile Ile Phe His Pro Glu Gln Asn
        835                 840                 845

Thr Ile Glu Glu Val Arg Cys Ser Thr Ala Ala His Ala Phe Lys Val
    850                 855                 860

Ala Ala Arg Ala Thr Leu Arg Arg Ser Asn Val Ser Arg Lys Arg Ser
865                 870                 875                 880

Ser Ser Leu Gly Gly Ser Thr Gly Ser Thr Pro Ser Ser Ser Ile Ser
                885                 890                 895

Ser Lys Ser Asn Ser Glu Asp Pro Phe Pro Gln Pro Glu Arg Gln Lys
            900                 905                 910

Gln Gln Gln Pro Leu Ala Leu Thr Gln Gln Glu Gln Gln Gln Gln Pro
        915                 920                 925

Leu Thr Leu Pro Gln Gln Gln Arg Ser Gln Gln Gln Pro Arg Cys Lys
    930                 935                 940

Gln Lys Val Ile Phe Gly Ser Gly Thr Val Thr Phe Ser Leu Ser Phe
945                 950                 955                 960

Asp Glu Pro Gln Lys Asn Ala Met Ala His Gly Asn Ser Thr His Gln
                965                 970                 975

Asn Ser Leu Glu Ala Gln Lys Ser Ser Asp Thr Leu Thr Arg His Gln
            980                 985                 990

Pro Leu Leu Pro Leu Gln Cys Gly Glu Thr Asp Leu Asp Leu Thr Val
        995                 1000                1005

Gln Glu Thr Gly Leu Gln Gly Pro Val Gly Gly Asp Gln Arg Pro Glu
    1010                1015                1020

Val Glu Asp Pro Glu Glu Leu Ser Pro Ala Leu Val Val Ser Ser Ser
1025                1030                1035                1040

Gln Ser Phe Val Ile Ser Gly Gly Gly Ser Thr Val Thr Glu Asn Val
                1045                1050                1055

Val Asn Ser Met Thr Leu Glu Ser Ile Met Ala Cys Cys Leu Ser Glu
            1060                1065                1070

Glu Ala Lys Glu Ala Arg Arg Ile Asn Asp Glu Ile Glu Arg Gln Leu
```

```
        1075                1080                1085

Arg Arg Asp Lys Arg Asp Ala Arg Arg Glu Leu Lys Leu Leu Leu Leu
    1090                1095                1100

Gly Thr Gly Glu Ser Gly Lys Ser Thr Phe Ile Lys Gln Met Arg Ile
1105                1110                1115                1120

Ile His Gly Ser Gly Tyr Ser Asp Glu Asp Lys Arg Gly Phe Thr Lys
                1125                1130                1135

Leu Val Tyr Gln Asn Ile Phe Thr Ala Met Gln Ala Met Ile Arg Ala
            1140                1145                1150

Met Asp Thr Leu Lys Ile Pro Tyr Lys Tyr Glu His Asn Lys Ala His
        1155                1160                1165

Ala Gln Leu Val Arg Glu Val Asp Val Glu Lys Val Ser Ala Phe Glu
    1170                1175                1180

Asn Pro Tyr Val Asp Ala Ile Lys Ser Leu Trp Asn Asp Pro Gly Ile
1185                1190                1195                1200

Gln Glu Cys Tyr Asp Arg Arg Arg Glu Tyr Gln Leu Ser Asp Ser Thr
                1205                1210                1215

Lys Tyr Tyr Leu Asn Asp Leu Asp Arg Val Ala Asp Pro Ala Tyr Leu
            1220                1225                1230

Pro Thr Gln Gln Asp Val Leu Arg Val Arg Val Pro Thr Thr Gly Ile
        1235                1240                1245

Ile Glu Tyr Pro Phe Asp Leu Gln Ser Val Ile Phe Arg Met Val Asp
    1250                1255                1260

Val Gly Gly Gln Arg Ser Glu Arg Arg Lys Trp Ile His Cys Phe Glu
1265                1270                1275                1280

Asn Val Thr Ser Ile Met Phe Leu Val Ala Leu Ser Glu Tyr Asp Gln
                1285                1290                1295

Val Leu Val Glu Ser Asp Asn Glu Asn Arg Met Glu Glu Ser Lys Ala
            1300                1305                1310

Leu Phe Arg Thr Ile Ile Thr Tyr Pro Trp Phe Gln Asn Ser Ser Val
        1315                1320                1325

Ile Leu Phe Leu Asn Lys Lys Asp Leu Leu Glu Glu Lys Ile Met Tyr
    1330                1335                1340

Ser His Leu Val Asp Tyr Phe Pro Glu Tyr Asp Gly Pro Gln Arg Asp
1345                1350                1355                1360

Ala Gln Ala Ala Arg Glu Phe Ile Leu Lys Met Phe Val Asp Leu Asn
                1365                1370                1375
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```
Pro Asp Ser Asp Lys Ile Ile Tyr Ser His Phe Thr Cys Ala Thr Asp
            1380                1385                1390

Thr Glu Asn Ile Arg Phe Val Phe Ala Ala Val Lys Asp Thr Ile Leu
        1395                1400                1405

Gln Leu Asn Leu Lys Asp Cys Gly Leu Phe
    1410                1415
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<210> 42
<211> 3909
<212> DNA
<213> Artificial Sequence

<220>
<223> Chimeric GABA-BR2*Gqo5

<400> 42

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ggctgggcgc ggggcgcccc ccggccgccg cccagcagcc cgccgctctc catcatgggc     180
ctcatgccgc tcaccaagga ggtggccaag ggcagcatcg ggcgcggtgt gctccccgcc     240
gtggaactgg ccatcgagca gatccgcaac gagtcactcc tgcgccctta cttcctcgac     300
ctgcggctct atgacacgga gtgcgacaac gcaaaagggt tgaaagcctt ctacgatgca     360
ataaaatacg ggccgaacca cttgatggtg tttggaggcg tctgtccatc cgtcacatcc     420
atcattgcag agtccctcca aggctggaat ctggtgcagc tttcttttgc tgcaaccacg     480
cctgttctag ccgataagaa aaaatacccct tatttctttc ggaccgtccc atcagacaat     540
gcggtgaatc cagccattct gaagttgctc aagcactacc agtggaagcg cgtgggcacg     600
ctgacgcaag acgttcagag gttctctgag gtgcggaatg acctgactgg agttctgtat     660
ggcgaggaca ttgagatttc agacaccgag agcttctcca acgatccctg taccagtgtc     720
aaaaagctga aggggaatga tgtgcggatc atccttggcc agtttgacca gaatatggca     780
gcaaaagtgt tctgttgtgc atacgaggag aacatgtatg gtagtaaata tcagtggatc     840
attccgggct ggtacgagcc ttcttggtgg gagcaggtgc acacggaagc caactcatcc     900
cgctgcctcc ggaagaatct gcttgctgcc atggagggct acattggcgt ggatttcgag     960
cccctgagct ccaagcagat caagaccatc tcaggaaaga ctccacagca gtatgagaga    1020
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cggcaccagc ggatccagga cttcaactac acggaccaca cgctgggcag gatcatcctc    1200
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tatgcctaca agggacttct catgttgttc ggttgtttct tagcttggga gacccgcaac    2040
gtcagcatcc ccgcactcaa cgacagcaag tacatcggga tgagtgtcta caacgtgggg    2100
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atcatgtgca tcatcggggc cgctgtctcc ttcctgaccc gggaccagcc caatgtgcag    2160
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cagttcactc agaatcagaa gaaagaagat tctaaaacgt ccacctcggt caccagtgtg    2340
aaccaagcca gcacatcccg cctggagggc ctacagtcag aaaaccatcg cctgcgaatg    2400
aagatcacag agctggataa agacttggaa gaggtcacca tgcagctgca ggacacacca    2460
gaaaagacca cctacattaa acagaaccac taccaagagc tcaatgacat cctcaacctg    2520
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accaaatact atcttaatga cttggaccgc gtagctgacc ctgcctacct gcctacgcaa    3360
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aacccagaca gtgacaaaat taactactcc cacttcacgt gcgccacaga caccgagaat    3840
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<210> 43
<211> 1303
<212> PRT
<213> Artificial Sequence

<220>
<223> Chimeric GABA-BR2*Gqo5

<400> 43

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Pro Pro Pro Pro Ala Arg Leu Leu Leu Leu Leu Leu Pro Leu Leu
            20                  25                  30

Leu Pro Leu Ala Pro Gly Ala Trp Gly Trp Ala Arg Gly Ala Pro Arg
        35                  40                  45

Pro Pro Pro Ser Ser Pro Pro Leu Ser Ile Met Gly Leu Met Pro Leu
    50                  55                  60
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```
Thr Lys Glu Val Ala Lys Gly Ser Ile Gly Arg Gly Val Leu Pro Ala
65                  70                  75                  80

Val Glu Leu Ala Ile Glu Gln Ile Arg Asn Glu Ser Leu Leu Arg Pro
                85                  90                  95

Tyr Phe Leu Asp Leu Arg Leu Tyr Asp Thr Glu Cys Asp Asn Ala Lys
            100                 105                 110

Gly Leu Lys Ala Phe Tyr Asp Ala Ile Lys Tyr Gly Pro Asn His Leu
        115                 120                 125

Met Val Phe Gly Gly Val Cys Pro Ser Val Thr Ser Ile Ile Ala Glu
    130                 135                 140

Ser Leu Gln Gly Trp Asn Leu Val Gln Leu Ser Phe Ala Ala Thr Thr
145                 150                 155                 160

Pro Val Leu Ala Asp Lys Lys Lys Tyr Pro Tyr Phe Phe Arg Thr Val
                165                 170                 175

Pro Ser Asp Asn Ala Val Asn Pro Ala Ile Leu Lys Leu Leu Lys His
            180                 185                 190

Tyr Gln Trp Lys Arg Val Gly Thr Leu Thr Gln Asp Val Gln Arg Phe
        195                 200                 205

Ser Glu Val Arg Asn Asp Leu Thr Gly Val Leu Tyr Gly Glu Asp Ile
    210                 215                 220

Glu Ile Ser Asp Thr Glu Ser Phe Ser Asn Asp Pro Cys Thr Ser Val
225                 230                 235                 240

Lys Lys Leu Lys Gly Asn Asp Val Arg Ile Ile Leu Gly Gln Phe Asp
                245                 250                 255

Gln Asn Met Ala Ala Lys Val Phe Cys Cys Ala Tyr Glu Glu Asn Met
            260                 265                 270

Tyr Gly Ser Lys Tyr Gln Trp Ile Ile Pro Gly Trp Tyr Glu Pro Ser
        275                 280                 285

Trp Trp Glu Gln Val His Thr Glu Ala Asn Ser Ser Arg Cys Leu Arg
    290                 295                 300

Lys Asn Leu Leu Ala Ala Met Glu Gly Tyr Ile Gly Val Asp Phe Glu
305                 310                 315                 320

Pro Leu Ser Ser Lys Gln Ile Lys Thr Ile Ser Gly Lys Thr Pro Gln
                325                 330                 335


Gln Tyr Glu Arg Glu Tyr Asn Asn Lys Arg Ser Gly Val Gly Pro Ser
            340                 345                 350

Lys Phe His Gly Tyr Ala Tyr Asp Gly Ile Trp Val Ile Ala Lys Thr
        355                 360                 365
```

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Leu Gln Arg Ala Met Glu Thr Leu His Ala Ser Ser Arg His Gln Arg
    370                 375                 380

Ile Gln Asp Phe Asn Tyr Thr Asp His Thr Leu Gly Arg Ile Ile Leu
385                 390                 395                 400

Asn Ala Met Asn Glu Thr Asn Phe Phe Gly Val Thr Gly Gln Val Val
                405                 410                 415

Phe Arg Asn Gly Glu Arg Met Gly Thr Ile Lys Phe Thr Gln Phe Gln
            420                 425                 430

Asp Ser Arg Glu Val Lys Val Gly Glu Tyr Asn Ala Val Ala Asp Thr
        435                 440                 445

Leu Glu Ile Ile Asn Asp Thr Ile Arg Phe Gln Gly Ser Glu Pro Pro
    450                 455                 460

Lys Asp Lys Thr Ile Ile Leu Glu Gln Leu Arg Lys Ile Ser Leu Pro
465                 470                 475                 480

Leu Tyr Ser Ile Leu Ser Ala Leu Thr Ile Leu Gly Met Ile Met Ala
                485                 490                 495

Ser Ala Phe Leu Phe Phe Asn Ile Lys Asn Arg Asn Gln Lys Leu Ile
            500                 505                 510

Lys Met Ser Ser Pro Tyr Met Asn Asn Leu Ile Ile Leu Gly Gly Met
        515                 520                 525

Leu Ser Tyr Ala Ser Ile Phe Leu Phe Gly Leu Asp Gly Ser Phe Val
    530                 535                 540

Ser Glu Lys Thr Phe Glu Thr Leu Cys Thr Val Arg Thr Trp Ile Leu
545                 550                 555                 560

Thr Val Gly Tyr Thr Thr Ala Phe Gly Ala Met Phe Ala Lys Thr Trp
                565                 570                 575

Arg Val His Ala Ile Phe Lys Asn Val Lys Met Lys Lys Lys Ile Ile
            580                 585                 590

Lys Asp Gln Lys Leu Leu Val Ile Val Gly Gly Met Leu Leu Ile Asp
        595                 600                 605

Leu Cys Ile Leu Ile Cys Trp Gln Ala Val Asp Pro Leu Arg Arg Thr
    610                 615                 620


Val Glu Lys Tyr Ser Met Glu Pro Asp Pro Ala Gly Arg Asp Ile Ser
625                 630                 635                 640

Ile Arg Pro Leu Leu Glu His Cys Glu Asn Thr His Met Thr Ile Trp
                645                 650                 655

Leu Gly Ile Val Tyr Ala Tyr Lys Gly Leu Leu Met Leu Phe Gly Cys
```

660 665 670

Phe Leu Ala Trp Glu Thr Arg Asn Val Ser Ile Pro Ala Leu Asn Asp
675 680 685

Ser Lys Tyr Ile Gly Met Ser Val Tyr Asn Val Gly Ile Met Cys Ile
690 695 700

Ile Gly Ala Ala Val Ser Phe Leu Thr Arg Asp Gln Pro Asn Val Gln
705 710 715 720

Phe Cys Ile Val Ala Leu Val Ile Ile Phe Cys Ser Thr Ile Thr Leu
725 730 735

Cys Leu Val Phe Val Pro Lys Leu Ile Thr Leu Arg Thr Asn Pro Asp
740 745 750

Ala Ala Thr Gln Asn Arg Arg Phe Gln Phe Thr Gln Asn Gln Lys Lys
755 760 765

Glu Asp Ser Lys Thr Ser Thr Ser Val Thr Ser Val Asn Gln Ala Ser
770 775 780

Thr Ser Arg Leu Glu Gly Leu Gln Ser Glu Asn His Arg Leu Arg Met
785 790 795 800

Lys Ile Thr Glu Leu Asp Lys Asp Leu Glu Glu Val Thr Met Gln Leu
805 810 815

Gln Asp Thr Pro Glu Lys Thr Thr Tyr Ile Lys Gln Asn His Tyr Gln
820 825 830

Glu Leu Asn Asp Ile Leu Asn Leu Gly Asn Phe Thr Glu Ser Thr Asp
835 840 845

Gly Gly Lys Ala Ile Leu Lys Asn His Leu Asp Gln Asn Pro Gln Leu
850 855 860

Gln Trp Asn Thr Thr Glu Pro Ser Arg Thr Cys Lys Asp Pro Ile Glu
865 870 875 880

Asp Ile Asn Ser Pro Glu His Ile Gln Arg Arg Leu Ser Leu Gln Leu
885 890 895

Pro Ile Leu His His Ala Tyr Leu Pro Ser Ile Gly Gly Val Asp Ala
900 905 910

Ser Cys Val Ser Pro Cys Val Ser Pro Thr Ala Ser Pro Arg His Arg
915 920 925

His Val Pro Pro Ser Phe Arg Val Met Val Ser Gly Leu Ala Ala Ala
930 935 940

Met Thr Leu Glu Ser Ile Met Ala Cys Cys Leu Ser Glu Glu Ala Lys
945 950 955 960

Glu Ala Arg Arg Ile Asn Asp Glu Ile Glu Arg Gln Leu Arg Arg Asp
965 970 975

Lys Arg Asp Ala Arg Arg Glu Leu Lys Leu Leu Leu Leu Gly Thr Gly
980 985 990

Glu Ser Gly Lys Ser Thr Phe Ile Lys Gln Met Arg Ile Ile His Gly
995 1000 1005

Ser Gly Tyr Ser Asp Glu Asp Lys Arg Gly Phe Thr Lys Leu Val Tyr
1010 1015 1020

Gln Asn Ile Phe Thr Ala Met Gln Ala Met Ile Arg Ala Met Asp Thr
1025 1030 1035 1040

Leu Lys Ile Pro Tyr Lys Tyr Glu His Asn Lys Ala His Ala Gln Leu
1045 1050 1055

Val Arg Glu Val Asp Val Glu Lys Val Ser Ala Phe Glu Asn Pro Tyr
1060 1065 1070

Val Asp Ala Ile Lys Ser Leu Trp Asn Asp Pro Gly Ile Gln Glu Cys
1075 1080 1085

Tyr Asp Arg Arg Arg Glu Tyr Gln Leu Ser Asp Ser Thr Lys Tyr Tyr
1090 1095 1100

Leu Asn Asp Leu Asp Arg Val Ala Asp Pro Ala Tyr Leu Pro Thr Gln
1105 1110 1115 1120

Gln Asp Val Leu Arg Val Arg Val Pro Thr Thr Gly Ile Ile Glu Tyr
1125 1130 1135

Pro Phe Asp Leu Gln Ser Val Ile Phe Arg Met Val Asp Val Gly Gly
1140 1145 1150

Gln Arg Ser Glu Arg Arg Lys Trp Ile His Cys Phe Glu Asn Val Thr
1155 1160 1165

Ser Ile Met Phe Leu Val Ala Leu Ser Glu Tyr Asp Gln Val Leu Val
1170 1175 1180

Glu Ser Asp Asn Glu Asn Arg Met Glu Glu Ser Lys Ala Leu Phe Arg
1185 1190 1195 1200

Thr Ile Ile Thr Tyr Pro Trp Phe Gln Asn Ser Ser Val Ile Leu Phe
1205 1210 1215

Leu Asn Lys Lys Asp Leu Leu Glu Glu Lys Ile Met Tyr Ser His Leu
1220 1225 1230

Val Asp Tyr Phe Pro Glu Tyr Asp Gly Pro Gln Arg Asp Ala Gln Ala
1235 1240 1245

Ala Arg Glu Phe Ile Leu Lys Met Phe Val Asp Leu Asn Pro Asp Ser
1250 1255 1260

```
Asp Lys Ile Asn Tyr Ser His Phe Thr Cys Ala Thr Asp Thr Glu Asn
1265                1270                1275                1280

Ile Arg Phe Val Phe Ala Ala Val Lys Asp Thr Ile Leu Gln Leu Asn
                1285                1290                1295

Leu Lys Gly Cys Gly Leu Tyr
            1300
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<210> 44
<211> 3969
<212> DNA
<213> Artificial Sequence

<220>
<223> Chimeric GABA-BR1a*Gqo5

<400> 44

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atcaggtacc ggggcctgac tcgggaccag gtgaaggcta tcaacttcct gccagtggac     180
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<210> 45
<211> 1323
<212> PRT
<213> Artificial Sequence

<220>
<223> Chimeric GABA-BRa1*Gqo5

<400> 45

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Ala Gly Gly Ala Gln Thr Pro Asn Ala Thr Ser Glu Gly Cys Gln Ile
            20                  25                  30

Ile His Pro Pro Trp Glu Gly Gly Ile Arg Tyr Arg Gly Leu Thr Arg
        35                  40                  45

Asp Gln Val Lys Ala Ile Asn Phe Leu Pro Val Asp Tyr Glu Ile Glu
```

```
    50                  55                  60

Tyr Val Cys Arg Gly Glu Arg Glu Val Val Gly Pro Lys Val Arg Lys
65                  70                  75                  80

Cys Leu Ala Asn Gly Ser Trp Thr Asp Met Asp Thr Pro Ser Arg Cys
                85                  90                  95

Val Arg Ile Cys Ser Lys Ser Tyr Leu Thr Leu Glu Asn Gly Lys Val
            100                 105                 110

Phe Leu Thr Gly Gly Asp Leu Pro Ala Leu Asp Gly Ala Arg Val Asp
        115                 120                 125

Phe Arg Cys Asp Pro Asp Phe His Leu Val Gly Ser Ser Arg Ser Ile
    130                 135                 140

Cys Ser Gln Gly Gln Trp Ser Thr Pro Lys Pro His Cys Gln Val Asn
145                 150                 155                 160

Arg Thr Pro His Ser Glu Arg Arg Ala Val Tyr Ile Gly Ala Leu Phe
                165                 170                 175

Pro Met Ser Gly Gly Trp Pro Gly Gly Gln Ala Cys Gln Pro Ala Val
            180                 185                 190

Glu Met Ala Leu Glu Asp Val Asn Ser Arg Arg Asp Ile Leu Pro Asp
        195                 200                 205

Tyr Glu Leu Lys Leu Ile His His Asp Ser Lys Cys Asp Pro Gly Gln
    210                 215                 220

Ala Thr Lys Tyr Leu Tyr Glu Leu Leu Tyr Asn Asp Pro Ile Lys Ile
225                 230                 235                 240

Ile Leu Met Pro Gly Cys Ser Ser Val Ser Thr Leu Val Ala Glu Ala
                245                 250                 255

Ala Arg Met Trp Asn Leu Ile Val Leu Ser Tyr Gly Ser Ser Ser Pro
            260                 265                 270

Ala Leu Ser Asn Arg Gln Arg Phe Pro Thr Phe Phe Arg Thr His Pro
        275                 280                 285

Ser Ala Thr Leu His Asn Pro Thr Arg Val Lys Leu Phe Glu Lys Trp
    290                 295                 300

Gly Trp Lys Lys Ile Ala Thr Ile Gln Gln Thr Thr Glu Val Phe Thr
305                 310                 315                 320

Ser Thr Leu Asp Asp Leu Glu Glu Arg Val Lys Glu Ala Gly Ile Glu
                325                 330                 335

Ile Thr Phe Arg Gln Ser Phe Phe Ser Asp Pro Ala Val Pro Val Lys
            340                 345                 350
```

```
Asn Leu Lys Arg Gln Asp Ala Arg Ile Ile Val Gly Leu Phe Tyr Glu
        355                 360                 365

Thr Glu Ala Arg Lys Val Phe Cys Glu Val Tyr Lys Glu Arg Leu Phe
    370                 375                 380

Gly Lys Lys Tyr Val Trp Phe Leu Ile Gly Trp Tyr Ala Asp Asn Trp
385                 390                 395                 400

Phe Lys Ile Tyr Asp Pro Ser Ile Asn Cys Thr Val Asp Glu Met Thr
                405                 410                 415

Glu Ala Val Glu Gly His Ile Thr Thr Glu Ile Val Met Leu Asn Pro
            420                 425                 430

Ala Asn Thr Arg Ser Ile Ser Asn Met Thr Ser Gln Glu Phe Val Glu
        435                 440                 445

Lys Leu Thr Lys Arg Leu Lys Arg His Pro Glu Glu Thr Gly Gly Phe
    450                 455                 460

Gln Glu Ala Pro Leu Ala Tyr Asp Ala Ile Trp Ala Leu Ala Leu Ala
465                 470                 475                 480

Leu Asn Lys Thr Ser Gly Gly Gly Gly Arg Ser Gly Val Arg Leu Glu
                485                 490                 495

Asp Phe Asn Tyr Asn Asn Gln Thr Ile Thr Asp Gln Ile Tyr Arg Ala
            500                 505                 510


Met Asn Ser Ser Ser Phe Glu Gly Val Ser Gly His Val Val Phe Asp
        515                 520                 525

Ala Ser Gly Ser Arg Met Ala Trp Thr Leu Ile Glu Gln Leu Gln Gly
    530                 535                 540

Gly Ser Tyr Lys Lys Ile Gly Tyr Tyr Asp Ser Thr Lys Asp Asp Leu
545                 550                 555                 560

Ser Trp Ser Lys Thr Asp Lys Trp Ile Gly Gly Ser Pro Pro Ala Asp
                565                 570                 575

Gln Thr Leu Val Ile Lys Thr Phe Arg Phe Leu Ser Gln Lys Leu Phe
            580                 585                 590

Ile Ser Val Ser Val Leu Ser Ser Leu Gly Ile Val Leu Ala Val Val
        595                 600                 605

Cys Leu Ser Phe Asn Ile Tyr Asn Ser His Val Arg Tyr Ile Gln Asn
    610                 615                 620

Ser Gln Pro Asn Leu Asn Asn Leu Thr Ala Val Gly Cys Ser Leu Ala
625                 630                 635                 640

Leu Ala Ala Val Phe Pro Leu Gly Leu Asp Gly Tyr His Ile Gly Arg
                645                 650                 655
```

```
Asn Gln Phe Pro Phe Val Cys Gln Ala Arg Leu Trp Leu Leu Gly Leu
            660                 665                 670

Gly Phe Ser Leu Gly Tyr Gly Ser Met Phe Thr Lys Ile Trp Trp Val
        675                 680                 685

His Thr Val Phe Thr Lys Lys Glu Glu Lys Lys Glu Trp Arg Lys Thr
    690                 695                 700

Leu Glu Pro Trp Lys Leu Tyr Ala Thr Val Gly Leu Leu Val Gly Met
705                 710                 715                 720

Asp Val Leu Thr Leu Ala Ile Trp Gln Ile Val Asp Pro Leu His Arg
                725                 730                 735

Thr Ile Glu Thr Phe Ala Lys Glu Glu Pro Lys Glu Asp Ile Asp Val
            740                 745                 750

Ser Ile Leu Pro Gln Leu Glu His Cys Ser Ser Arg Lys Met Asn Thr
        755                 760                 765

Trp Leu Gly Ile Phe Tyr Gly Tyr Lys Gly Leu Leu Leu Leu Leu Gly
    770                 775                 780

Ile Phe Leu Ala Tyr Glu Thr Lys Ser Val Ser Thr Glu Lys Ile Asn
785                 790                 795                 800

Asp His Arg Ala Val Gly Met Ala Ile Tyr Asn Val Ala Val Leu Cys
                805                 810                 815

Leu Ile Thr Ala Pro Val Thr Met Ile Leu Ser Ser Gln Gln Asp Ala
            820                 825                 830

Ala Phe Ala Phe Ala Ser Leu Ala Ile Val Phe Ser Ser Tyr Ile Thr
        835                 840                 845

Leu Val Val Leu Phe Val Pro Lys Met Arg Arg Leu Ile Thr Arg Gly
    850                 855                 860

Glu Trp Gln Ser Glu Ala Gln Asp Thr Met Lys Thr Gly Ser Ser Thr
865                 870                 875                 880

Asn Asn Asn Glu Glu Glu Lys Ser Arg Leu Leu Glu Lys Glu Asn Arg
                885                 890                 895

Glu Leu Glu Lys Ile Ile Ala Glu Lys Glu Glu Arg Val Ser Glu Leu
            900                 905                 910

Arg His Gln Leu Gln Ser Arg Gln Gln Leu Arg Ser Arg Arg His Pro
        915                 920                 925

Pro Thr Pro Pro Glu Pro Ser Gly Gly Leu Pro Arg Gly Pro Pro Glu
    930                 935                 940

Pro Pro Asp Arg Leu Ser Cys Asp Gly Ser Arg Val His Leu Leu Tyr
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945 950 955 960

Lys Ala Ala Ala Met Thr Leu Glu Ser Ile Met Ala Cys Cys Leu Ser
965 970 975

Glu Glu Ala Lys Glu Ala Arg Arg Ile Asn Asp Glu Ile Glu Arg Gln
980 985 990

Leu Arg Arg Asp Lys Arg Asp Ala Arg Arg Glu Leu Lys Leu Leu Leu
995 1000 1005

Leu Gly Thr Gly Glu Ser Gly Lys Ser Thr Phe Ile Lys Gln Met Arg
1010 1015 1020

Ile Ile His Gly Ser Gly Tyr Ser Asp Glu Asp Lys Arg Gly Phe Thr
1025 1030 1035 1040

Lys Leu Val Tyr Gln Asn Ile Phe Thr Ala Met Gln Ala Met Ile Arg
1045 1050 1055

Ala Met Asp Thr Leu Lys Ile Pro Tyr Lys Tyr Glu His Asn Lys Ala
1060 1065 1070

His Ala Gln Leu Val Arg Glu Val Asp Val Glu Lys Val Ser Ala Phe
1075 1080 1085

Glu Asn Pro Tyr Val Asp Ala Ile Lys Ser Leu Trp Asn Asp Pro Gly
1090 1095 1100

Ile Gln Glu Cys Tyr Asp Arg Arg Arg Glu Tyr Gln Leu Ser Asp Ser
1105 1110 1115 1120

Thr Lys Tyr Tyr Leu Asn Asp Leu Asp Arg Val Ala Asp Pro Ala Tyr
1125 1130 1135

Leu Pro Thr Gln Gln Asp Val Leu Arg Val Arg Val Pro Thr Thr Gly
1140 1145 1150

Ile Ile Glu Tyr Pro Phe Asp Leu Gln Ser Val Ile Phe Arg Met Val
1155 1160 1165

Asp Val Gly Gly Gln Arg Ser Glu Arg Arg Lys Trp Ile His Cys Phe
1170 1175 1180

Glu Asn Val Thr Ser Ile Met Phe Leu Val Ala Leu Ser Glu Tyr Asp
1185 1190 1195 1200

Gln Val Leu Val Glu Ser Asp Asn Glu Asn Arg Met Glu Glu Ser Lys
1205 1210 1215

Ala Leu Phe Arg Thr Ile Ile Thr Tyr Pro Trp Phe Gln Asn Ser Ser
1220 1225 1230

Val Ile Leu Phe Leu Asn Lys Lys Asp Leu Leu Glu Glu Lys Ile Met
1235 1240 1245

```
Tyr Ser His Leu Val Asp Tyr Phe Pro Glu Tyr Asp Gly Pro Gln Arg
    1250                1255                1260

Asp Ala Gln Ala Ala Arg Glu Phe Ile Leu Lys Met Phe Val Asp Leu
1265                1270                1275                1280

Asn Pro Asp Ser Asp Lys Ile Ile Tyr Ser His Phe Thr Cys Ala Thr
                1285                1290                1295

Asp Thr Glu Asn Ile Arg Phe Val Phe Ala Ala Val Lys Asp Thr Ile
            1300                1305                1310

Leu Gln Leu Asn Leu Lys Gly Cys Gly Leu Tyr
        1315                1320
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<210> 46
<211> 4231
<212> DNA
<213> Artificial Sequence

<220>
<223> Chimeric pmGluR2//CaR*G(qi5+3Ala

<400> 46

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caccagaagg gcggcccagc agaggactgt ggtcctgtca atgagcaccg tggcatccag     180
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<210> 47
<211> 1397
<212> PRT
<213> Artificial Sequence

<220>
<223> Chimeric pmGluR2//CaR*G(qi5+3Ala

<400> 47

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            20                  25                  30

Val Leu Gly Gly Leu Phe Pro Val His Gln Lys Gly Gly Pro Ala Glu
        35                  40                  45

Asp Cys Gly Pro Val Asn Glu His Arg Gly Ile Gln Arg Leu Glu Ala
    50                  55                  60

Met Leu Phe Ala Leu Asp Arg Ile Asn Arg Asp Pro His Leu Leu Pro
65                  70                  75                  80

Gly Val Arg Leu Gly Ala His Ile Leu Asp Ser Cys Ser Lys Asp Thr
                85                  90                  95

His Ala Leu Glu Gln Ala Leu Asp Phe Val Arg Ala Ser Leu Ser Arg
            100                 105                 110


Gly Ala Asp Gly Ser Arg His Ile Cys Pro Asp Gly Ser Tyr Ala Thr
        115                 120                 125

His Gly Asp Ala Pro Thr Ala Ile Thr Gly Val Ile Gly Gly Ser Tyr
    130                 135                 140

Ser Asp Val Ser Ile Gln Val Ala Asn Leu Leu Arg Leu Phe Gln Ile
145                 150                 155                 160

Pro Gln Ile Ser Tyr Ala Ser Thr Ser Ala Lys Leu Ser Asp Lys Ser
                165                 170                 175

Arg Tyr Asp Tyr Phe Ala Arg Thr Val Pro Pro Asp Phe Phe Gln Ala
            180                 185                 190

Lys Ala Met Ala Glu Ile Leu Arg Phe Phe Asn Trp Thr Tyr Val Ser
        195                 200                 205

Thr Val Ala Ser Glu Gly Asp Tyr Gly Glu Thr Gly Ile Glu Ala Phe
    210                 215                 220

Glu Leu Glu Ala Arg Ala Arg Asn Ile Cys Val Ala Thr Ser Glu Lys
225                 230                 235                 240

Val Gly Arg Ala Met Ser Arg Ala Ala Phe Glu Gly Val Val Arg Ala
                245                 250                 255

Leu Leu Gln Lys Pro Ser Ala Arg Val Ala Val Leu Phe Thr Arg Ser
            260                 265                 270

Glu Asp Ala Arg Glu Leu Leu Ala Ala Ser Gln Arg Leu Asn Ala Ser
        275                 280                 285

Phe Thr Trp Val Ala Ser Asp Gly Trp Gly Ala Leu Glu Ser Val Val
    290                 295                 300

Ala Gly Ser Glu Gly Ala Ala Glu Gly Ala Ile Thr Ile Glu Leu Ala
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305 310 315 320

Ser Tyr Pro Ile Ser Asp Phe Ala Ser Tyr Phe Gln Ser Leu Asp Pro
325 330 335

Trp Asn Asn Ser Arg Asn Pro Trp Phe Arg Glu Phe Trp Glu Gln Arg
340 345 350

Phe Arg Cys Ser Phe Arg Gln Arg Asp Cys Ala Ala His Ser Leu Arg
355 360 365

Ala Val Pro Phe Glu Gln Glu Ser Lys Ile Met Phe Val Val Asn Ala
370 375 380

Val Tyr Ala Met Ala His Ala Leu His Asn Met His Arg Ala Leu Cys
385 390 395 400

Pro Asn Thr Thr Arg Leu Cys Asp Ala Met Arg Pro Val Asn Gly Arg
405 410 415

Arg Leu Tyr Lys Asp Phe Val Leu Asn Val Lys Phe Asp Ala Pro Phe
420 425 430

Arg Pro Ala Asp Thr His Asn Glu Val Arg Phe Asp Arg Phe Gly Asp
435 440 445

Gly Ile Gly Arg Tyr Asn Ile Phe Thr Tyr Leu Arg Ala Gly Ser Gly
450 455 460

Arg Tyr Arg Tyr Gln Lys Val Gly Tyr Trp Ala Glu Gly Leu Thr Leu
465 470 475 480

Asp Thr Ser Leu Ile Pro Trp Ala Ser Pro Ser Ala Gly Pro Leu Pro
485 490 495

Ala Ser Arg Cys Ser Glu Pro Cys Leu Gln Asn Glu Val Lys Ser Val
500 505 510

Gln Pro Gly Glu Val Cys Cys Trp Leu Cys Ile Pro Cys Gln Pro Tyr
515 520 525

Glu Tyr Arg Leu Asp Glu Phe Thr Cys Ala Asp Cys Gly Leu Gly Tyr
530 535 540

Trp Pro Asn Ala Ser Leu Thr Gly Cys Phe Glu Leu Pro Gln Glu Tyr
545 550 555 560

Ile Arg Trp Gly Asp Ala Trp Ala Val Gly Pro Val Thr Ile Ala Cys
565 570 575

Leu Gly Ala Leu Ala Thr Leu Phe Val Leu Gly Val Phe Val Arg His
580 585 590

Asn Ala Thr Pro Val Val Lys Ala Ser Gly Arg Glu Leu Cys Tyr Ile
595 600 605

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Leu Leu Gly Gly Val Phe Leu Cys Tyr Cys Met Thr Phe Ile Phe Ile
    610                 615                 620

Ala Lys Pro Ser Thr Ala Val Cys Thr Leu Arg Arg Leu Gly Leu Gly
625                 630                 635                 640

Thr Ala Phe Ser Val Cys Tyr Ser Ala Leu Leu Thr Lys Thr Asn Arg
                645                 650                 655

Ile Ala Arg Ile Phe Gly Gly Ala Arg Glu Gly Ala Gln Arg Pro Arg
            660                 665                 670

Phe Ile Ser Pro Ala Ser Gln Val Ala Ile Cys Leu Ala Leu Ile Ser
        675                 680                 685


Gly Gln Leu Leu Ile Val Val Ala Trp Leu Val Val Glu Ala Pro Gly
    690                 695                 700

Thr Gly Lys Glu Thr Ala Pro Glu Arg Arg Glu Val Val Thr Leu Arg
705                 710                 715                 720

Cys Asn His Arg Asp Ala Ser Met Leu Gly Ser Leu Ala Tyr Asn Val
                725                 730                 735

Leu Leu Ile Ala Leu Cys Thr Leu Tyr Ala Phe Lys Thr Arg Lys Cys
            740                 745                 750

Pro Glu Asn Phe Asn Glu Ala Lys Phe Ile Gly Phe Thr Met Tyr Thr
        755                 760                 765

Thr Cys Ile Ile Trp Leu Ala Phe Leu Pro Ile Phe Tyr Val Thr Ser
    770                 775                 780

Ser Asp Tyr Arg Val Gln Thr Thr Thr Met Cys Val Ser Val Ser Leu
785                 790                 795                 800

Ser Gly Ser Val Val Leu Gly Cys Leu Phe Ala Pro Lys Leu His Ile
                805                 810                 815

Ile Leu Phe Gln Pro Gln Lys Asn Thr Ile Glu Glu Val Arg Cys Ser
            820                 825                 830

Thr Ala Ala His Ala Phe Lys Val Ala Ala Arg Ala Thr Leu Arg Arg
        835                 840                 845

Ser Asn Val Ser Arg Lys Arg Ser Ser Ser Leu Gly Gly Ser Thr Gly
    850                 855                 860

Ser Thr Pro Ser Ser Ser Ile Ser Ser Lys Ser Asn Ser Glu Asp Pro
865                 870                 875                 880

Phe Pro Gln Pro Glu Arg Gln Lys Gln Gln Gln Pro Leu Ala Leu Thr
                885                 890                 895

Gln Gln Glu Gln Gln Gln Gln Pro Leu Thr Leu Pro Gln Gln Gln Arg
            900                 905                 910
```

s Val Ile Phe Gly Ser Gly
925

u Pro Gln Lys Asn Ala Met
940

r Leu Glu Ala Gln Lys Ser
955 960

u Leu Pro Leu Gln Cys Gly
975

u Thr Gly Leu Gln Gly Pro
990

u Asp Pro Glu Glu Leu Ser
1005

r Phe Val Ile Ser Gly Gly
1020

u Ser Ala Ala Ala Met Thr
1035 1040

r Glu Glu Ala Lys Glu Ala
0 1055

n Leu Arg Arg Asp Lys Arg
1070

u Leu Gly Thr Gly Glu Ser
1085

y Ile Ile His Gly Ser Gly
1100

r Lys Leu Val Tyr Gln Asn
1115 1120

g Ala Met Asp Thr Leu Lys
0 1135

a His Ala Gln Leu Val Arg
1150

e Glu Asn Pro Tyr Val Asp
1165

Ile Gln Glu Cys Tyr Asp
1180

r Thr Lys Tyr Tyr Leu Asn
1195 1200

r Leu Pro Thr Gln Gln Asp

```
                1205                1210                1215

Val Leu Arg Val Arg Val Pro Thr Thr Gly Ile Ile Glu Tyr Pro Phe
            1220                1225                1230

Asp Leu Gln Ser Val Ile Phe Arg Met Val Asp Val Gly Gly Gln Arg
        1235                1240                1245

Ser Glu Arg Arg Lys Trp Ile His Cys Phe Glu Asn Val Thr Ser Ile
    1250                1255                1260


Met Phe Leu Val Ala Leu Ser Glu Tyr Asp Gln Val Leu Val Glu Ser
1265                1270                1275                1280

Asp Asn Glu Asn Arg Met Glu Glu Ser Lys Ala Leu Phe Arg Thr Ile
                1285                1290                1295

Ile Thr Tyr Pro Trp Phe Gln Asn Ser Ser Val Ile Leu Phe Leu Asn
            1300                1305                1310

Lys Lys Asp Leu Leu Glu Glu Lys Ile Met Tyr Ser His Leu Val Asp
        1315                1320                1325

Tyr Phe Pro Glu Tyr Asp Gly Pro Gln Arg Asp Ala Gln Ala Ala Arg
    1330                1335                1340

Glu Phe Ile Leu Lys Met Phe Val Asp Leu Asn Pro Asp Ser Asp Lys
1345                1350                1355                1360

Ile Ile Tyr Ser His Phe Thr Cys Ala Thr Asp Thr Glu Asn Ile Arg
                1365                1370                1375

Phe Val Phe Ala Ala Val Lys Asp Thr Ile Leu Gln Leu Asn Leu Lys
            1380                1385                1390

Asp Cys Gly Leu Phe
        1395
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<210> 48
<211> 905
<212> PRT
<213> Chimeric construct ph8SPmGluR4

<400> 48

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Met Val Cys Glu Gly Lys Arg Ser Ala Ser Cys Pro Cys Phe Phe Leu
 1               5                  10                  15
Leu Thr Ala Lys Phe Tyr Trp Ile Leu Thr Met Met Gln Arg Thr His
            20                  25                  30
Ser Gln Glu Tyr Ala His Ser Ile Arg Ile Asp Gly Asp Ile Thr Leu
        35                  40                  45
Gly Gly Leu Phe Pro Val His Gly Arg Gly Ser Glu Gly Lys Pro Cys
    50                  55                  60
Gly Glu Leu Lys Lys Glu Lys Gly Ile His Arg Leu Glu Ala Met Leu
65                  70                  75                  80
```

```
Phe Ala Leu Asp Arg Ile Asn Asn Asp Pro Asp Leu Leu Pro Asn Ile
                85                  90                  95
Thr Leu Gly Ala Arg Ile Leu Asp Thr Cys Ser Arg Asp Thr His Ala
            100                 105                 110
Leu Glu Gln Ser Leu Thr Phe Val Gln Ala Leu Ile Glu Lys Asp Gly
        115                 120                 125
Thr Glu Val Arg Cys Gly Ser Gly Gly Pro Pro Ile Ile Thr Lys Pro
    130                 135                 140
Glu Arg Val Val Gly Val Ile Gly Ala Ser Gly Ser Ser Val Ser Ile
145                 150                 155                 160
Met Val Ala Asn Ile Leu Arg Leu Phe Lys Ile Pro Gln Ile Ser Tyr
                165                 170                 175
Ala Ser Thr Ala Pro Asp Leu Ser Asp Asn Ser Arg Tyr Asp Phe Phe
            180                 185                 190
Ser Arg Val Val Pro Ser Asp Thr Tyr Gln Ala Gln Ala Met Val Asp
        195                 200                 205
Ile Val Arg Ala Leu Lys Trp Asn Tyr Val Ser Thr Val Ala Ser Glu
    210                 215                 220
Gly Ser Tyr Gly Glu Ser Gly Val Glu Ala Phe Ile Gln Lys Ser Arg
225                 230                 235                 240
Glu Asp Gly Gly Val Cys Ile Ala Gln Ser Val Lys Ile Pro Arg Glu
                245                 250                 255
Pro Lys Ala Gly Glu Phe Asp Lys Ile Ile Arg Arg Leu Leu Glu Thr
            260                 265                 270
Ser Asn Ala Arg Ala Val Ile Ile Phe Ala Asn Glu Asp Asp Ile Arg
        275                 280                 285
Arg Val Leu Glu Ala Ala Arg Arg Ala Asn Gln Thr Gly His Phe Phe
    290                 295                 300
Trp Met Gly Ser Asp Ser Trp Gly Ser Lys Ile Ala Pro Val Leu His
305                 310                 315                 320
Leu Glu Glu Val Ala Glu Gly Ala Val Thr Ile Leu Pro Lys Arg Met
                325                 330                 335
Ser Val Arg Gly Phe Asp Arg Tyr Phe Ser Ser Arg Thr Leu Asp Asn
            340                 345                 350
Asn Arg Arg Asn Ile Trp Phe Ala Glu Phe Trp Glu Asp Asn Phe His
        355                 360                 365
Cys Lys Leu Ser Arg His Ala Leu Lys Lys Gly Ser His Val Lys Lys
    370                 375                 380
Cys Thr Asn Arg Glu Arg Ile Gly Gln Asp Ser Ala Tyr Glu Gln Glu
385                 390                 395                 400
Gly Lys Val Gln Phe Val Ile Asp Ala Val Tyr Ala Met Gly His Ala
                405                 410                 415
Leu His Ala Met His Arg Asp Leu Cys Pro Gly Arg Val Gly Leu Cys
            420                 425                 430
Pro Arg Met Asp Pro Val Asp Gly Thr Gln Leu Leu Lys Tyr Ile Arg
        435                 440                 445
Asn Val Asn Phe Ser Gly Ile Ala Gly Asn Pro Val Thr Phe Asn Glu
    450                 455                 460
Asn Gly Asp Ala Pro Gly Arg Tyr Asp Ile Tyr Gln Tyr Gln Leu Arg
465                 470                 475                 480
Asn Asp Ser Ala Glu Tyr Lys Val Ile Gly Ser Trp Thr Asp His Leu
                485                 490                 495
His Leu Arg Ile Glu Arg Met His Trp Pro Gly Ser Gly Gln Gln Leu
            500                 505                 510
Pro Arg Ser Ile Cys Ser Leu Pro Cys Gln Pro Gly Glu Arg Lys Lys
        515                 520                 525
Thr Val Lys Gly Met Pro Cys Cys Trp His Cys Glu Pro Cys Thr Gly
```

```
    530                 535                 540
Tyr Gln Tyr Gln Val Asp Arg Tyr Thr Cys Lys Thr Cys Pro Tyr Asp
545                 550                 555                 560
Met Arg Pro Thr Glu Asn Arg Thr Gly Cys Arg Pro Ile Pro Ile Ile
                565                 570                 575
Lys Leu Glu Trp Gly Ser Pro Trp Ala Val Leu Pro Leu Phe Leu Ala
            580                 585                 590
Val Val Gly Ile Ala Ala Thr Leu Phe Val Val Ile Thr Phe Val Arg
        595                 600                 605
Tyr Asn Asp Thr Pro Ile Val Lys Ala Ser Gly Arg Glu Leu Ser Tyr
    610                 615                 620
Val Leu Leu Ala Gly Ile Phe Leu Cys Tyr Ala Thr Thr Phe Leu Met
625                 630                 635                 640
Ile Ala Glu Pro Asp Leu Gly Thr Cys Ser Leu Arg Arg Ile Phe Leu
                645                 650                 655
Gly Leu Gly Met Ser Ile Ser Tyr Ala Ala Leu Leu Thr Lys Thr Asn
            660                 665                 670
Arg Ile Tyr Arg Ile Phe Glu Gln Gly Lys Arg Ser Val Ser Ala Pro
        675                 680                 685
Arg Phe Ile Ser Pro Ala Ser Gln Leu Ala Ile Thr Phe Ser Leu Ile
    690                 695                 700
Ser Leu Gln Leu Leu Gly Ile Cys Val Trp Phe Val Val Asp Pro Ser
705                 710                 715                 720
His Ser Val Val Asp Phe Gln Asp Gln Arg Thr Leu Asp Pro Arg Phe
                725                 730                 735
Arg Val Leu Lys Cys Asp Ile Ser Asp Leu Ser Leu Ile Cys Leu Leu
            740                 745                 750
Gly Tyr Ser Met Leu Leu Met Val Thr Cys Thr Val Tyr Ala Ile Lys
        755                 760                 765
Thr Arg Gly Val Pro Glu Thr Phe Asn Glu Ala Lys Pro Ile Gly Phe
    770                 775                 780
Thr Met Tyr Thr Thr Cys Ile Val Trp Leu Ala Phe Ile Pro Ile Phe
785                 790                 795                 800
Phe Gly Thr Ser Gln Ser Ala Asp Lys Leu Tyr Ile Gln Thr Thr Thr
                805                 810                 815
Leu Thr Val Ser Val Ser Leu Ser Ala Ser Val Ser Leu Gly Met Leu
            820                 825                 830
Tyr Met Pro Lys Val Tyr Ile Ile Leu Phe His Pro Glu Gln Asn Val
        835                 840                 845
Pro Lys Arg Lys Arg Ser Leu Lys Ala Val Val Thr Ala Ala Thr Met
    850                 855                 860
Ser Asn Lys Phe Thr Gln Lys Gly Asn Phe Arg Pro Asn Gly Glu Ala
865                 870                 875                 880
Lys Ser Glu Leu Cys Glu Asn Leu Glu Ala Pro Ala Thr Lys Gln Thr
                885                 890                 895
Tyr Val Thr Tyr Thr Asn His Ala Ile
            900                 905
```

<210> 49
<211> 1416
<212> PRT
<213> Chimeric phmGluR4//CaR*AAA*G $_{q}$i5

<400> 49

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Met Val Cys Glu Gly Lys Arg Ser Ala Ser Cys Pro Cys Phe Phe Leu
 1               5                  10                  15
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```
Leu Thr Ala Lys Phe Tyr Trp Ile Leu Thr Met Met Gln Arg Thr His
            20                  25                  30
Ser Gln Glu Tyr Ala His Ser Ile Arg Ile Asp Gly Asp Ile Thr Leu
        35                  40                  45
Gly Gly Leu Phe Pro Val His Gly Arg Gly Ser Glu Gly Lys Pro Cys
    50                  55                  60
Gly Glu Leu Lys Lys Glu Lys Gly Ile His Arg Leu Glu Ala Met Leu
65                  70                  75                  80
Phe Ala Leu Asp Arg Ile Asn Asn Asp Pro Asp Leu Leu Pro Asn Ile
                85                  90                  95
Thr Leu Gly Ala Arg Ile Leu Asp Thr Cys Ser Arg Asp Thr His Ala
            100                 105                 110
Leu Glu Gln Ser Leu Thr Phe Val Gln Ala Leu Ile Glu Lys Asp Gly
        115                 120                 125
Thr Glu Val Arg Cys Gly Ser Gly Gly Pro Pro Ile Ile Thr Lys Pro
    130                 135                 140
Glu Arg Val Val Gly Val Ile Gly Ala Ser Gly Ser Ser Val Ser Ile
145                 150                 155                 160
Met Val Ala Asn Ile Leu Arg Leu Phe Lys Ile Pro Gln Ile Ser Tyr
                165                 170                 175
Ala Ser Thr Ala Pro Asp Leu Ser Asp Asn Ser Arg Tyr Asp Phe Phe
            180                 185                 190
Ser Arg Val Val Pro Ser Asp Thr Tyr Gln Ala Gln Ala Met Val Asp
        195                 200                 205
Ile Val Arg Ala Leu Lys Trp Asn Tyr Val Ser Thr Val Ala Ser Glu
    210                 215                 220
Gly Ser Tyr Gly Glu Ser Gly Val Glu Ala Phe Ile Gln Lys Ser Arg
225                 230                 235                 240
Glu Asp Gly Gly Val Cys Ile Ala Gln Ser Val Lys Ile Pro Arg Glu
                245                 250                 255
Pro Lys Ala Gly Glu Phe Asp Lys Ile Ile Arg Arg Leu Leu Glu Thr
            260                 265                 270
Ser Asn Ala Arg Ala Val Ile Ile Phe Ala Asn Glu Asp Asp Ile Arg
        275                 280                 285
Arg Val Leu Glu Ala Ala Arg Arg Ala Asn Gln Thr Gly His Phe Phe
    290                 295                 300
Trp Met Gly Ser Asp Ser Trp Gly Ser Lys Ile Ala Pro Val Leu His
305                 310                 315                 320
Leu Glu Glu Val Ala Glu Gly Ala Val Thr Ile Leu Pro Lys Arg Met
                325                 330                 335
Ser Val Arg Gly Phe Asp Arg Tyr Phe Ser Ser Arg Thr Leu Asp Asn
            340                 345                 350
Asn Arg Arg Asn Ile Trp Phe Ala Glu Phe Trp Glu Asp Asn Phe His
        355                 360                 365
Cys Lys Leu Ser Arg His Ala Leu Lys Lys Gly Ser His Val Lys Lys
    370                 375                 380
Cys Thr Asn Arg Glu Arg Ile Gly Gln Asp Ser Ala Tyr Glu Gln Glu
385                 390                 395                 400
Gly Lys Val Gln Phe Val Ile Asp Ala Val Tyr Ala Met Gly His Ala
                405                 410                 415
Leu His Ala Met His Arg Asp Leu Cys Pro Gly Arg Val Gly Leu Cys
            420                 425                 430
Pro Arg Met Asp Pro Val Asp Gly Thr Gln Leu Leu Lys Tyr Ile Arg
        435                 440                 445
Asn Val Asn Phe Ser Gly Ile Ala Gly Asn Pro Val Thr Phe Asn Glu
    450                 455                 460
Asn Gly Asp Ala Pro Gly Arg Tyr Asp Ile Tyr Gln Tyr Gln Leu Arg
```

```
465                 470                 475                 480
Asn Asp Ser Ala Glu Tyr Lys Val Ile Gly Ser Trp Thr Asp His Leu
                485                 490                 495
His Leu Arg Ile Glu Arg Met His Trp Pro Gly Ser Gly Gln Gln Leu
            500                 505                 510
Pro Arg Ser Ile Cys Ser Leu Pro Cys Gln Pro Gly Glu Arg Lys Lys
        515                 520                 525
Thr Val Lys Gly Met Pro Cys Cys Trp His Cys Glu Pro Cys Thr Gly
    530                 535                 540
Tyr Gln Tyr Gln Val Asp Arg Tyr Thr Cys Lys Thr Cys Pro Tyr Asp
545                 550                 555                 560
Met Arg Pro Thr Glu Asn Arg Thr Gly Cys Arg Pro Ile Pro Ile Ile
                565                 570                 575
Lys Leu Glu Trp Gly Ser Pro Trp Ala Val Leu Pro Leu Phe Leu Ala
            580                 585                 590
Val Val Gly Ile Ala Ala Thr Leu Phe Val Val Ile Thr Phe Val Arg
        595                 600                 605
Tyr Asn Asp Thr Pro Ile Val Lys Ala Ser Gly Arg Glu Leu Ser Tyr
    610                 615                 620
Val Leu Leu Ala Gly Ile Phe Leu Cys Tyr Ala Thr Thr Phe Leu Met
625                 630                 635                 640
Ile Ala Glu Pro Asp Leu Gly Thr Cys Ser Leu Arg Arg Ile Phe Leu
                645                 650                 655
Gly Leu Gly Met Ser Ile Ser Tyr Ala Ala Leu Leu Thr Lys Thr Asn
            660                 665                 670
Arg Ile Tyr Arg Ile Phe Glu Gln Gly Lys Arg Ser Val Ser Ala Pro
        675                 680                 685
Arg Phe Ile Ser Pro Ala Ser Gln Leu Ala Ile Thr Phe Ser Leu Ile
    690                 695                 700
Ser Leu Gln Leu Leu Gly Ile Cys Val Trp Phe Val Val Asp Pro Ser
705                 710                 715                 720
His Ser Val Val Asp Phe Gln Asp Gln Arg Thr Leu Asp Pro Arg Phe
                725                 730                 735
Arg Val Leu Lys Cys Asp Ile Ser Asp Leu Ser Leu Ile Cys Leu Leu
            740                 745                 750
Gly Tyr Ser Met Leu Leu Met Val Thr Cys Thr Val Tyr Ala Ile Lys
        755                 760                 765
Thr Arg Gly Val Pro Glu Thr Phe Asn Glu Ala Lys Pro Ile Gly Phe
    770                 775                 780
Thr Met Tyr Thr Thr Cys Ile Val Trp Leu Ala Phe Ile Pro Ile Phe
785                 790                 795                 800
Phe Gly Thr Ser Gln Ser Ala Asp Lys Leu Tyr Ile Gln Thr Thr Thr
                805                 810                 815
Leu Thr Val Ser Val Ser Leu Ser Ala Ser Val Ser Leu Gly Met Leu
            820                 825                 830
Tyr Met Pro Lys Val Tyr Ile Ile Leu Phe His Pro Glu Gln Asn Thr
        835                 840                 845
Ile Glu Glu Val Arg Cys Ser Thr Ala Ala His Ala Phe Lys Val Ala
    850                 855                 860
Ala Arg Ala Thr Leu Arg Arg Ser Asn Val Ser Arg Lys Arg Ser Ser
865                 870                 875                 880
Ser Leu Gly Gly Ser Thr Gly Ser Thr Pro Ser Ser Ser Ile Ser Ser
                885                 890                 895
Lys Ser Asn Ser Glu Asp Pro Phe Pro Gln Pro Glu Arg Gln Lys Gln
            900                 905                 910
Gln Gln Pro Leu Ala Leu Thr Gln Gln Glu Gln Gln Gln Gln Pro Leu
        915                 920                 925
```

```
Thr Leu Pro Gln Gln Gln Arg Ser Gln Gln Gln Pro Arg Cys Lys Gln
    930                 935                 940
Lys Val Ile Phe Gly Ser Gly Thr Val Thr Phe Ser Leu Ser Phe Asp
945                 950                 955                 960
Glu Pro Gln Lys Asn Ala Met Ala His Gly Asn Ser Thr His Gln Asn
                965                 970                 975
Ser Leu Glu Ala Gln Lys Ser Ser Asp Thr Leu Thr Arg His Gln Pro
            980                 985                 990
Leu Leu Pro Leu Gln Cys Gly Glu Thr Asp Leu Asp Leu Thr Val Gln
        995                 1000                1005
Glu Thr Gly Leu Gln Gly Pro Val Gly Gly Asp Gln Arg Pro Glu Val
    1010                1015                1020
Glu Asp Pro Glu Glu Leu Ser Pro Ala Leu Val Val Ser Ser Ser Gln
1025                1030                1035                1040
Ser Phe Val Ile Ser Gly Gly Gly Ser Thr Val Thr Glu Asn Val Val
                1045                1050                1055
Asn Ser Ala Ala Ala Met Thr Leu Glu Ser Ile Met Ala Cys Cys Leu
            1060                1065                1070
Ser Glu Glu Ala Lys Glu Ala Arg Arg Ile Asn Asp Glu Ile Glu Arg
        1075                1080                1085
Gln Leu Arg Arg Asp Lys Arg Asp Ala Arg Arg Glu Leu Lys Leu Leu
    1090                1095                1100
Leu Leu Gly Thr Gly Glu Ser Gly Lys Ser Thr Phe Ile Lys Gln Met
1105                1110                1115                1120
Arg Ile Ile His Gly Ser Gly Tyr Ser Asp Glu Asp Lys Arg Gly Phe
                1125                1130                1135
Thr Lys Leu Val Tyr Gln Asn Ile Phe Thr Ala Met Gln Ala Met Ile
            1140                1145                1150
Arg Ala Met Asp Thr Leu Lys Ile Pro Tyr Lys Tyr Glu His Asn Lys
        1155                1160                1165
Ala His Ala Gln Leu Val Arg Glu Val Asp Val Glu Lys Val Ser Ala
    1170                1175                1180
Phe Glu Asn Pro Tyr Val Asp Ala Ile Lys Ser Leu Trp Asn Asp Pro
1185                1190                1195                1200
Gly Ile Gln Glu Cys Tyr Asp Arg Arg Arg Glu Tyr Gln Leu Ser Asp
                1205                1210                1215
Ser Thr Lys Tyr Tyr Leu Asn Asp Leu Asp Arg Val Ala Asp Pro Ala
            1220                1225                1230
Tyr Leu Pro Thr Gln Gln Asp Val Leu Arg Val Arg Val Pro Thr Thr
        1235                1240                1245
Gly Ile Ile Glu Tyr Pro Phe Asp Leu Gln Ser Val Ile Phe Arg Met
    1250                1255                1260
Val Asp Val Gly Gly Gln Arg Ser Arg Lys Trp Ile His Cys Phe Glu
1265                1270                1275                1280
Asn Val Thr Ser Ile Met Phe Leu Val Ser Glu Tyr Asp Gln Val Leu
                1285                1290                1295
Val Glu Ser Asp Asn Glu Asn Arg Met Glu Glu Ser Lys Ala Leu Phe
            1300                1305                1310
Arg Thr Ile Ile Thr Tyr Pro Trp Phe Gln Asn Ser Ser Val Ile Leu
        1315                1320                1325
Phe Leu Asn Lys Lys Asp Leu Leu Glu Glu Lys Ile Met Tyr Ser His
    1330                1335                1340
Leu Val Asp Tyr Phe Pro Glu Tyr Asp Gly Pro Gln Arg Asp Ala Gln
1345                1350                1355                1360
Ala Ala Arg Glu Phe Ile Leu Lys Met Phe Val Asp Leu Asn Pro Asp
                1365                1370                1375
Ser Asp Lys Ile Ile Tyr Ser His Phe Thr Cys Ala Thr Asp Thr Glu
```

```
            1380                1385                1390
Asn Ile Arg Phe Val Phe Ala Ala Val Lys Asp Thr Ile Leu Gln Leu
        1395                1400                1405
Asn Leu Lys Asp Cys Gly Leu Phe
    1410                1415


<210> 50
<211> 1411
<212> PRT
<213> Chimeric phmGluR8//CaR*AAA*G qi5

<400> 50
Met Val Cys Glu Gly Lys Arg Ser Ala Ser Cys Pro Cys Phe Phe Leu
 1               5                  10                  15
Leu Thr Ala Lys Phe Tyr Trp Ile Leu Thr Met Met Gln Arg Thr His
            20                  25                  30
Ser Gln Glu Tyr Ala His Ser Ile Arg Val Asp Gly Asp Ile Ile Leu
        35                  40                  45
Gly Gly Leu Phe Pro Val His Ala Lys Gly Glu Arg Gly Val Pro Cys
    50                  55                  60
Gly Glu Leu Lys Lys Glu Lys Gly Ile His Arg Leu Glu Ala Met Leu
65                  70                  75                  80
Tyr Ala Ile Asp Gln Ile Asn Lys Asp Pro Asp Leu Leu Ser Asn Ile
                85                  90                  95
Thr Leu Gly Val Arg Ile Leu Asp Thr Cys Ser Arg Asp Thr Tyr Ala
            100                 105                 110
Leu Glu Gln Ser Leu Thr Phe Val Gln Ala Leu Ile Glu Lys Asp Ala
        115                 120                 125
Ser Asp Val Lys Cys Ala Asn Gly Asp Pro Pro Ile Phe Thr Lys Pro
    130                 135                 140
Asp Lys Ile Ser Gly Val Ile Gly Ala Ala Ala Ser Ser Val Ser Ile
145                 150                 155                 160
Met Val Ala Asn Ile Leu Arg Leu Phe Lys Ile Pro Gln Ile Ser Tyr
                165                 170                 175
Ala Ser Thr Ala Pro Glu Leu Ser Asp Asn Thr Arg Tyr Asp Phe Phe
            180                 185                 190
Ser Arg Val Val Pro Pro Asp Ser Tyr Gln Ala Gln Ala Met Val Asp
        195                 200                 205
Ile Val Thr Ala Leu Gly Trp Asn Tyr Val Ser Thr Leu Ala Ser Glu
    210                 215                 220
Gly Asn Tyr Gly Glu Ser Gly Val Glu Ala Phe Thr Gln Ile Ser Arg
225                 230                 235                 240
Glu Ile Gly Gly Val Cys Ile Ala Gln Ser Gln Lys Ile Pro Arg Glu
                245                 250                 255
Pro Arg Pro Gly Glu Phe Glu Lys Ile Ile Lys Arg Leu Leu Glu Thr
            260                 265                 270
Pro Asn Ala Arg Ala Val Ile Met Phe Ala Asn Glu Asp Asp Ile Arg
        275                 280                 285
Arg Ile Ala Ala Lys Lys Leu Asn Gln Ser Gly His Phe Leu Trp Ile
    290                 295                 300
Gly Ser Asp Ser Trp Gly Ser Lys Ile Ala Pro Val Tyr Gln Gln Glu
305                 310                 315                 320
Glu Ile Ala Glu Gly Ala Val Thr Ile Leu Pro Lys Arg Ala Ser Ile
                325                 330                 335
Asp Gly Phe Asp Arg Tyr Phe Arg Ser Arg Thr Leu Ala Asn Asn Arg
            340                 345                 350
```

```
Arg Asn Val Trp Phe Ala Glu Phe Trp Glu Glu Asn Phe Gly Cys Lys
        355                 360                 365
Leu Gly Ser His Gly Lys Arg Asn Ser His Ile Lys Lys Cys Thr Gly
    370                 375                 380
Leu Glu Arg Ile Ala Arg Asp Ser Ser Tyr Glu Gln Glu Gly Lys Val
385                 390                 395                 400
Gln Phe Val Ile Asp Ala Val Tyr Ser Met Ala Tyr Ala Leu His Asn
                405                 410                 415
Met His Lys Asp Leu Cys Pro Gly Tyr Ile Gly Leu Cys Pro Arg Met
            420                 425                 430
Ser Thr Ile Asp Gly Lys Glu Leu Leu Gly Tyr Ile Arg Ala Val Asn
        435                 440                 445
Phe Asn Gly Ser Ala Gly Thr Pro Val Thr Phe Asn Glu Asn Gly Asp
    450                 455                 460
Ala Pro Gly Arg Tyr Asp Ile Phe Gln Tyr Gln Ile Thr Asn Lys Ser
465                 470                 475                 480
Thr Glu Tyr Lys Val Ile Gly His Trp Thr Asn Gln Leu His Leu Lys
                485                 490                 495
Val Glu Asp Met Gln Trp Ala His Arg Glu His Thr His Pro Ala Ser
            500                 505                 510
Val Cys Ser Leu Pro Cys Lys Pro Gly Glu Arg Lys Lys Thr Val Lys
        515                 520                 525
Gly Val Pro Cys Cys Trp His Cys Glu Arg Cys Glu Gly Tyr Asn Tyr
    530                 535                 540
Gln Val Asp Glu Leu Ser Cys Glu Leu Cys Pro Leu Asp Gln Arg Pro
545                 550                 555                 560
Asn Met Asn Arg Thr Gly Cys Gln Leu Ile Pro Ile Ile Lys Leu Glu
                565                 570                 575
Trp His Ser Pro Trp Ala Val Val Pro Val Phe Val Ala Ile Leu Gly
            580                 585                 590
Ile Ile Ala Thr Thr Phe Val Ile Val Thr Phe Val Arg Tyr Asn Asp
        595                 600                 605
Thr Pro Ile Val Arg Ala Ser Gly Arg Glu Leu Ser Tyr Val Leu Leu
    610                 615                 620
Thr Gly Ile Phe Leu Cys Ile Thr Phe Leu Met Ile Ala Ala Pro Asp
625                 630                 635                 640
Thr Ile Ile Cys Ser Phe Arg Arg Val Phe Leu Gly Leu Gly Met Cys
                645                 650                 655
Phe Ser Tyr Ala Ala Leu Leu Thr Lys Thr Asn Arg Ile His Arg Ile
            660                 665                 670
Phe Glu Gln Gly Lys Lys Ser Val Thr Ala Pro Lys Phe Ile Ser Pro
        675                 680                 685
Ala Ser Gln Leu Val Ile Thr Phe Ser Leu Ile Ser Val Gln Leu Leu
    690                 695                 700
Gly Val Phe Val Trp Phe Val Val Asp Pro Pro His Ile Ile Ile Asp
705                 710                 715                 720
Tyr Gly Glu Gln Arg Thr Leu Asp Pro Glu Lys Arg Val Leu Lys Cys
                725                 730                 735
Asp Ile Ser Asp Leu Ser Leu Ile Cys Ser Leu Gly Tyr Ser Ile Leu
            740                 745                 750
Leu Met Val Thr Cys Thr Val Tyr Ala Ile Lys Thr Arg Gly Val Pro
        755                 760                 765
Glu Thr Phe Asn Glu Ala Lys Pro Ile Gly Phe Thr Met Tyr Thr Thr
    770                 775                 780
Cys Ile Ile Trp Leu Ala Phe Ile Pro Ile Phe Phe Gly Thr Ala Gln
785                 790                 795                 800
Ser Ala Glu Lys Met Tyr Ile Gln Thr Thr Thr Leu Thr Val Ser Met
```

```
                805                 810                 815
Ser Leu Ser Ala Ser Val Ser Leu Gly Met Leu Tyr Met Pro Lys Val
            820                 825                 830
Tyr Ile Ile Ile Phe His Pro Glu Gln Asn Thr Ile Glu Glu Val Arg
        835                 840                 845
Cys Ser Thr Ala Ala His Ala Phe Lys Val Ala Ala Arg Ala Thr Leu
    850                 855                 860
Arg Arg Ser Asn Val Ser Arg Lys Arg Ser Ser Ser Leu Gly Gly Ser
865                 870                 875                 880
Thr Gly Ser Thr Pro Ser Ser Ser Ile Ser Ser Lys Ser Asn Ser Glu
                885                 890                 895
Asp Pro Phe Pro Gln Pro Glu Arg Gln Lys Gln Gln Gln Pro Leu Ala
            900                 905                 910
Leu Thr Gln Gln Glu Gln Gln Gln Gln Pro Leu Thr Leu Pro Gln Gln
        915                 920                 925
Gln Arg Ser Gln Gln Gln Pro Arg Cys Lys Gln Lys Val Ile Phe Gly
    930                 935                 940
Ser Gly Thr Val Thr Phe Ser Leu Ser Phe Asp Glu Pro Gln Lys Asn
945                 950                 955                 960
Ala Met Ala His Gly Asn Ser Thr His Gln Asn Ser Leu Glu Ala Gln
                965                 970                 975
Lys Ser Ser Asp Thr Leu Thr Arg His Gln Pro Leu Leu Pro Leu Gln
            980                 985                 990
Cys Gly Glu Thr Asp Leu Asp Leu Thr Val Gln Glu Thr Gly Leu Gln
        995                 1000                1005
Gly Pro Val Gly Gly Asp Gln Arg Pro Glu Val Glu Asp Pro Glu Glu
    1010                1015                1020
Leu Ser Pro Ala Leu Val Val Ser Ser Ser Gln Ser Phe Val Ile Ser
1025                1030                1035                1040
Gly Gly Gly Ser Thr Val Thr Glu Asn Val Val Asn Ser Ala Ala Ala
                1045                1050                1055
Met Thr Leu Glu Ser Ile Met Ala Cys Cys Leu Ser Glu Glu Ala Lys
            1060                1065                1070
Glu Ala Arg Arg Ile Asn Asp Glu Ile Glu Arg Gln Leu Arg Arg Asp
        1075                1080                1085
Lys Arg Asp Ala Arg Arg Glu Leu Lys Leu Leu Leu Leu Gly Thr Gly
    1090                1095                1100
Glu Ser Gly Lys Ser Thr Phe Ile Lys Gln Met Arg Ile Ile His Gly
1105                1110                1115                1120
Ser Gly Tyr Ser Asp Glu Asp Lys Arg Gly Phe Thr Lys Leu Val Tyr
                1125                1130                1135
Gln Asn Ile Phe Thr Ala Met Gln Ala Met Ile Arg Ala Met Asp Thr
            1140                1145                1150
Leu Lys Ile Pro Tyr Lys Tyr Glu His Asn Lys Ala His Ala Gln Leu
        1155                1160                1165
Val Arg Glu Val Asp Val Glu Lys Val Ser Ala Phe Glu Asn Pro Tyr
    1170                1175                1180
Val Asp Ala Ile Lys Ser Leu Trp Asn Asp Pro Gly Ile Gln Glu Cys
1185                1190                1195                1200
Tyr Asp Arg Arg Arg Glu Tyr Gln Leu Ser Asp Ser Thr Lys Tyr Tyr
                1205                1210                1215
Leu Asn Asp Leu Asp Arg Val Ala Asp Pro Ala Tyr Leu Pro Thr Gln
            1220                1225                1230
Gln Asp Val Leu Arg Val Arg Val Pro Thr Thr Gly Ile Ile Glu Tyr
        1235                1240                1245
Pro Phe Asp Leu Gln Ser Val Ile Phe Arg Met Val Asp Val Gly Gly
    1250                1255                1260
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Gln Arg Ser Arg Lys Trp Ile His Cys Phe Glu Asn Val Thr Ser Ile
1265 1270 1275 1280
Met Phe Leu Val Ser Glu Tyr Asp Gln Val Leu Val Glu Ser Asp Asn
1285 1290 1295
Glu Asn Arg Met Glu Glu Ser Lys Ala Leu Phe Arg Thr Ile Ile Thr
1300 1305 1310
Tyr Pro Trp Phe Gln Asn Ser Ser Val Ile Leu Phe Leu Asn Lys Lys
1315 1320 1325
Asp Leu Leu Glu Glu Lys Ile Met Tyr Ser His Leu Val Asp Tyr Phe
1330 1335 1340
Pro Glu Tyr Asp Gly Pro Gln Arg Asp Ala Gln Ala Ala Arg Glu Phe
1345 1350 1355 1360
Ile Leu Lys Met Phe Val Asp Leu Asn Pro Asp Ser Asp Lys Ile Ile
1365 1370 1375
Tyr Ser His Phe Thr Cys Ala Thr Asp Thr Glu Asn Ile Arg Phe Val
1380 1385 1390
Phe Ala Ala Val Lys Asp Thr Ile Leu Gln Leu Asn Leu Lys Asp Cys
1395 1400 1405
Gly Leu Phe
1410